



Arizona FirstNet Pre-Consultation Readiness Report

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Executive Summary

The public safety community has made significant strides toward strengthening national preparedness and improving emergency communications capabilities. First responders, however, continue to be limited by fragmented voice and data networks and decades-old wireless technologies. Deploying a cost-effective, nationwide, public safety wireless broadband network will provide public safety agencies with access to advanced, cutting edge technologies and applications to improve their emergency response capabilities.

Signed into law on February 22, 2012, the Middle Class Tax Relief and Job Creation Act created the First Responder Network Authority (FirstNet). The law establishes FirstNet's mission to build, deploy, operate and maintain the first high-speed, nationwide wireless broadband network dedicated to public safety. The network will be operated and maintained by FirstNet as a self-supporting, fee-based network providing a single interoperable platform for emergency and daily public safety communications.

On April 30, 2014 Arizona and all other states and territories received notice from FirstNet commencing the formal State Consultation process as required by legislation under the Middle Class Tax Relief and Job Creation Act of 2012. For this process, FirstNet requested certain information ("the Checklist") to be provided prior to the initial State Consultation meeting that officially commences the consultation process for an individual state. This document responds to specific information requests by FirstNet. In addition, as a reference for our Arizona public safety stakeholders and so FirstNet may be fully prepared for our initial consultation, this document includes additional information on the progress of the Arizona FirstNet program's Education and Outreach efforts, attitudes and opinions of stakeholders, characteristics of Arizona geography, population and critical infrastructure, detailed information on federal, state and local public safety agencies and personnel, Tribal information, and the current state of wireless broadband coverage. This report demonstrates that Arizona is fully prepared to begin the formal consultation process with FirstNet. The specific FirstNet Checklist elements are summarized in the following sections of this Executive Summary.

Introduction: Leveraging Long Term Evolution (LTE) technology standards, \$7 billion in funding from spectrum auctions and a nationwide license of 20 MHz of radio frequency spectrum, FirstNet is responsible for building a nationwide wireless data network that dramatically increases the safety and capabilities of all of those who serve in a public safety capacity. This section describes FirstNet's mission and their relationship to the National Telecommunications & Information Administration (NTIA), National Institute of Standards and Technology (NIST), Public Safety Communications Research (PSCR), and the Public Safety Advisory Committee (PSAC).

The introduction also documents the mission, structure and roles of Arizona FirstNet. Arizona FirstNet creates and sustains relationships with Arizona stakeholders and FirstNet to influence the State Plan for Arizona, ensure public safety and public service requirements are met, and

facilitate informed decision making. Arizona FirstNet is working in collaboration with federal, regional, tribal, and local jurisdictions, on planning, consulting, and development activities. This section provides an overview of Arizona FirstNet's Education & Outreach, Data Collection, and Consultation responsibilities.

Governance: A multi-level information sharing and collaboration structure governs Arizona's public safety communications community. As it relates to FirstNet and the development of the Nationwide Public Safety Broadband Network (NPSBN), this structure consists of the Arizona FirstNet team within the Arizona Department of Administration (ADOA) Broadband Planning and Public Safety Communications (BPPSC) group, the Arizona Public Safety Wireless Broadband Network Workgroup (AZPSBN), the Statewide Interoperability Executive Committee (SIEC) and associated workgroups, and an executive group comprised of key Agency Directors and Policy Advisors to the Governor that are kept informed of developments and progress. In addition to those groups, Arizona FirstNet is actively working with other stakeholder and governance groups such as homeland security committees, the Arizona Commission on Indian Affairs (ACIA), and various federal & regional Governance Groups.

The stakeholders involved in planning, education and outreach for the NPSBN involve all members of the public safety community. Arizona considers the broader public safety stakeholder community to include law enforcement agencies, fire departments, Emergency Medical Service (EMS) agencies, correctional institutions, as well as other municipal, county, state, tribal, and federal agencies performing public safety or public service activities. In addition, Arizona includes non-governmental organizations (NGOs) that perform public safety or public service activities.

Education and Outreach: The Education and Outreach section summarizes Arizona FirstNet's overall goals, strategies and activity metrics for interacting with our stakeholders. Arizona's education and outreach program focuses on direct stakeholder engagement and interaction, through open public meetings, an active regularly updated website, and other regular electronic and in-person communication. The program encourages and coordinates collaborative efforts to help identify and address local, regional and state barriers to the planning and adoption of FirstNet. The goal is to:

- Enable the Arizona FirstNet team to understand the needs, desires, assumptions, constraints and expectations of Arizona's public safety and public service agencies.
- Identify mediums to share important FirstNet information with all stakeholders.
- Identify and collect local agency requirements and issues.

To date, the Arizona program has conducted extensive education and outreach activities among local public safety agencies, tribes and local governments in preparation for the initial State Consultation. The Arizona FirstNet Program has travelled over 11,322 miles during 49 trips across Arizona to conduct or attend over 115 meetings. At these meetings, over 3,000 handouts have been distributed to 2,245 stakeholders during 2,414 outreach hours. The Activities section documents these stakeholder contacts and further describes each outreach activity. The

information gathered from these meetings is documented in the Key Findings & Outcomes section, and also reflected throughout this report, particularly in the Arizona Overview, Arizona Public Safety Highlights, Barriers to Participation and Adoption of FirstNet, and the Legal Barriers sections.

In the Key Findings & Outcomes section we document the needs, desires, assumptions, constraints and expectations of Arizona's public safety and public service agencies. Our efforts to date have been limited to educating the public safety community on FirstNet and the NPSBN, as opposed to research and data collection efforts. However, there are certain anecdotal point of views, observations, and feedback we have received. This section documents that feedback in the following categories:

- Cost
- Coverage and Capacity
- Awareness/Comprehension
- Perceptions and Views about FirstNet
- Interest/Adoption Propensity
- Existing Data and Technology Use Current Commercial Usage/Reliance/Issues
- Public Safety User Definitions

Initial Consultation Meeting: The goal of Arizona's initial consultation meeting is to position Arizona to appropriately influence the State Plan for Arizona and ensure our unique public safety and public service requirements are met. During this meeting we hope to communicate to FirstNet the unique needs of our state—including Tribal, Border and Rural issues, share information about FirstNet and the overall consultation process with our stakeholders, and collaborate with FirstNet on the development of our state plan.

Arizona's expected outcomes for our initial consultation with FirstNet are to:

- Establish baseline expectations for the State Consultation Process.
- Facilitate informed decision making among key Arizona stakeholders who will have an influence on the Governor's decision on whether or not to accept the State Plan from FirstNet.
- Communicate Arizona's key priorities for the NPSBN and perceived challenges with the development and adoption of FirstNet.
- Demonstrate that the Arizona FirstNet program is prepared and well equipped to negotiate with FirstNet on behalf of Arizona stakeholders for the development of the State Plan.

This section further identifies a proposed agenda, locations, dates and attendee list for the initial consultation.

Arizona Overview: The Arizona Overview section provides a high-level overview of the State to ensure FirstNet has a basic understanding of the following aspects that will impact the development of the network in Arizona:

- Geography
- Climate
- Population Density
- Land Ownership
- Critical Infrastructure
- Known Natural Disaster Hazards
- International Border with Mexico
- Tribes
- Counties
- Arizona Wireless Broadband Penetration

Arizona Public Safety Highlights: This section provides an overview of the public safety stakeholder community in Arizona. Arizona has approximately 170 law enforcement agencies, 255 fire districts and departments, 78 ground ambulance companies, and 18 licensed air ambulance companies. As of 2011, Arizona has approximately 15,000 sworn law enforcement officers and 9,000 correctional service officers. Arizona has approximately 11,524 certified Basic Emergency Medical Technicians (EMTs), 40 certified intermediate EMTs and 5,488 certified Paramedics.

Legal Barriers: This section discusses the potential barriers FirstNet may encounter during the development of the network. This includes both potential barriers to consulting with FirstNet, as well as potential barriers to public safety agencies' participation and adoption of FirstNet. Arizona FirstNet has conducted a preliminary analysis of obstacles, laws and /or legal issues that may impede Arizona's ability to fully participate in FirstNet. We will continue to research these issues as part of the State and Local Implementation Grant Program (SLIGP). Specific Statutes and Executive Orders that might impact the consultation process or adoption of FirstNet are also included in this report.

Wireless Contract Vehicles: This section identifies the various types of contracts in use in Arizona by public safety agencies for wireless data services. The majority of Arizona's public safety agencies rely on wireless data contracts offered through the Western States Contracting Alliance (WSCA). The State of Arizona uses WSCA Wireless Contracts from AT&T Mobility, Verizon Wireless, Sprint Solutions Inc., and T-Mobile USA Inc.

In addition, a number of agencies do not have specific contracts for wireless data, but instead provide responders with a subsidy to off-set the cost of using their personal data plans. The contract language for each State of Arizona WSCA Wireless Contract is included in this report.

Acronyms & Initialisms

Table 1: Acronyms & Initialisms

Acronym	Definition
ACIA	Arizona Commission on Indian Affairs
ADEM	Arizona Division of Emergency Management
ADOA	Arizona Department of Administration
ADOT	Arizona Department of Transportation
APCO	Association of Public Safety Communications Officials
A.R.S.	Arizona Revised Statute
AZDOHS	Arizona Department of Homeland Security
AZPSBN	Arizona Public Safety Wireless Broadband Network Workgroup
BIA	Bureau of Indian Affairs
BIG-NET	Broadband Interoperable Gateway Network
BLM	Bureau of Land Management
BPPSC	Broadband Planning and Public Safety Communications
BTOP	Broadband Technology Opportunities Program
BYOD	Bring Your Own Device
BYODP	Bring Your Own Data Plan
CAD	Computer Aided Dispatch
CASM	Communication Assets Survey and Mapping
CBP	U.S. Customs and Border Patrol
CIO	Chief Information Officer
COW	Cellular on Wheels (COW)
DEA	Drug Enforcement Agency (DEA)
DOC	Department of Commerce
DOI	Department of Interior
DPS	Department of Public Safety
DSL	Digital Subscriber Line
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
ICIN	Indian Country Intelligence Network
ICTAP	Interoperable Communications Technical Assistance Program
IT	Information Technology
ITCA	Inter-Tribal Council of Arizona
IWCE	International Wireless Communications Expo
IWG	Interoperability Working Group
LMR	Land Mobile Radio

Acronym	Definition
LTE	Long Term Evolution
MCAS	Marine Corps Air Station
MCDEM	Maricopa County Department of Emergency Management
MDC	Mobile Data Computer
MDT	Mobile Data Terminal
NCSWIC	National Council of Statewide Interoperability Coordinators
NEPA	National Environmental Policy Act
NG9-1-1	Next Generation 9-1-1
NPS	National Park Service
NPSBN	Nationwide Public Safety Wireless Broadband Network
NPSTC	National Public Safety Telecommunications Council
NTIA	National Telecommunications & Information Administration
OEC	Office of Emergency Communications
POST	Arizona Peace Officer Standards and Training Board
PSAC	Public Safety Advisory Committee
PSAP	Public Safety Answering Point
RAC	Regional Advisory Council
RAN	Radio Access Network
RECCWG	Regional Emergency Communications Coordinators Working Group
RF	Radio Frequency
RFI	Request for Information
RFP	Request for Proposal
RWC	Regional Wireless Cooperative
SAA	State Administrative Agency
SAC	Homeland Security Senior Advisory Committee
SBI	State Broadband Initiative (SBI)
SCIP	Statewide Communications Interoperability Plan (SCIP)
SIEC	Statewide Interoperability Executive Committee
SLIGP	State and Local Implementation Grant Program
SPOC	Single Point of Contact
SWBCWG	Southwest Border Communications Working Group
SWIC	Statewide Interoperability Coordinator
TLECA	Tribal Law Enforcement Consortium of Arizona
TRWC	TOPAZ Regional Wireless Cooperative
UHF	Ultra High Frequency
USFS	United States Forest Service
VHF	Very High Frequency
WSCA	Western States Contracting Alliance
YRCS	Yuma Regional Communications System

References

The following documents provide additional background information on the Arizona FirstNet project or are documents directly supporting the Pre-Consultation Readiness Report.

2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, Federal Communications Commission (FCC), available online at:

http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0224/FCC-15-10A1.pdf

Arizona Department of Administration (ADOA) Policy Statement, Tribal Consultation Policy, available online at: http://azcia.gov/Documents/TCP/2011/FFY11_TCP_ADOA.pdf

Arizona 2010 Census Results, available online at:

<http://census.gov/2010census/data/embedstate.html?state=AZ>

Arizona Broadband Planning Map, available online at:

<http://broadbandmap.az.gov/broadbandapp/#ajax/map.html>.

Arizona Constitution Article 9, § 7: Gift or loan of credit; subsidies; stock ownership; joint ownership, available online at:

<http://www.azleg.gov/FormatDocument.asp?inDoc=/const/9/7.htm>

Arizona FirstNet LinkedIn Page, available online at: <http://www.linkedin.com/groups/AZ-FirstNet-6725665>

Arizona FirstNet Twitter Page, available online at: <https://twitter.com/AZFirstNet>

Arizona FirstNet program website, available online at: <http://azfirstnet.az.gov>

Arizona Geological Society Natural Hazards Viewer, available online at:

<http://data.azgs.az.gov/hazard-viewer/>

Arizona OpenGIS Initiative for Deceased Migrants, available online at:

<http://www.humaneborders.info/>

Arizona Public Safety Wireless Broadband Network Workgroup Membership List, available online at: <http://azfirstnet.az.gov/about/azpsbn>

Arizona Revised Statute § 12-713. Emergency call system; public safety radio communications network; liability standard, available online at:

<http://azleg.gov/FormatDocument.asp?inDoc=/ars/12/00713.htm&Title=12&DocType=ARS>

Arizona Revised Statute § 38-431.01, Public Meetings and Proceedings, available online at:

<http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/38/00431-01.htm&Title=38&DocType=ARS>

Arizona Statewide Communications Interoperability Plan, available online at:

<https://casmnextgen.com/pslib/index.php/webview?docid=45>

Arizona Tribal Leadership List, available online at: http://azcia.gov/tribes_of_arizona.asp

Communication Assets Survey and Mapping (CASM) tool, available online at:
<https://casmnextgen.com/>

Certified Arizona Air Ambulance Providers, available online at:
<http://www.azdhs.gov/bems/documents/ambulance/air/LicensedAirProviders.pdf>

Executive Order 2006-14, Consultation and Cooperation with Arizona Tribes, available online at: http://azcia.gov/Documents/TCP/EO_2006-14.pdf

List of Arizona Counties, available online at:
https://en.wikipedia.org/wiki/List_of_counties_in_Arizona

Long Term Evolution (LTE) Public Safety Information Sheet, Federal Communications Commission, available online at:
http://transition.fcc.gov/pshs/docs/LTE_Info_Sheet_09082010.pdf

Public Law 112–96, Middle Class Tax Relief and Job Creation Act Of 2012, available online at: <http://www.gpo.gov/fdsys/pkg/PLAW-112publ96/pdf/PLAW-112publ96.pdf>

United States Border Patrol, Agent Staffing by Fiscal Year, available online at:
http://www.cbp.gov/sites/default/files/documents/BP%20Staffing%20FY1992-FY2014_0.pdf

United States Border Patrol, Southwest Border Deaths FY1998-FY2014, available online at:
http://www.cbp.gov/sites/default/files/documents/BP%20Southwest%20Border%20Sector%20Deaths%20FY1998%20-%20FY2014_0.pdf

United States Border Patrol, Total Illegal Alien Apprehensions by Fiscal Year, available online at:
http://www.cbp.gov/sites/default/files/documents/BP%20Total%20Apps%2C%20Mexico%2C%20OTM%20FY2000-FY2014_0.pdf

Introduction

The public safety community has made significant strides toward strengthening national preparedness and improving emergency communications capabilities. First responders, however, continue to be limited by fragmented voice and data networks and decades-old wireless technologies. Deploying a cost-effective, nationwide, public safety wireless broadband network will provide public safety agencies with access to advanced, cutting edge technologies and applications to improve their emergency response capabilities.

Signed into law on February 22, 2012, the Middle Class Tax Relief and Job Creation Act created the First Responder Network Authority (FirstNet). The law gives FirstNet the mission to build, deploy, operate and maintain the first high-speed, nationwide wireless broadband network dedicated to public safety. Once built out, the network will be run and maintained by FirstNet as a self-supporting, fee-based network providing a single interoperable platform for emergency and daily public safety communications.

Leveraging Long Term Evolution (LTE) technology standards, \$7 billion in funding from spectrum auctions and a nationwide license of 20 MHz of radio frequency spectrum, the FirstNet network is intended to dramatically increase the safety and capabilities of all of those who serve in a public safety capacity.

Public safety will benefit from the availability of a dedicated wireless broadband network prioritized for first responders, the economies of scale afforded by a national, commercial standards-based network, and the force of innovation in applications and devices which to date has only been enjoyed by consumers.

This broadband network will fulfill a fundamental need of the public safety community as well as the last remaining recommendation of the 9/11 Commission. FirstNet will bring 21st century tools to millions of organizations and individuals that respond to emergencies at the local, state, tribal and federal levels.

About FirstNet

FirstNet is an independent authority within the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA). NTIA is principally responsible by law for advising the President on telecommunications and information policy issues and manages the Federal Government's use of spectrum. FirstNet is governed by a 15-member Board consisting of the Attorney General of the United States, the Secretary of Homeland Security, the Director of the Office of Management and Budget, and 12 members appointed by the Secretary of Commerce. The FirstNet Board is composed of representatives from public safety; local, state and federal government; and the wireless industry. These dedicated individuals bring their expertise, experience and commitment to serving public safety and meeting the FirstNet mission.

FirstNet also collaborates with the National Institute of Standards and Technologies (NIST) and the Public Safety Communications Research (PSCR) program, which is a joint program managed by NIST's Office of Law Enforcement Standards and NTIA's Institute for Telecommunication Sciences. These entities are involved in standards setting and research to advance public safety communications interoperability. PSCR sponsors events and provides forums where FirstNet can exchange ideas and information with the vendor community that is developing broadband wireless equipment, services and devices. In addition, PSCR represents FirstNet's interests in various international and domestic standards bodies in a collaborative effort aimed at moving public safety needs into the standards used for network and device equipment manufacturers. FirstNet also anticipates working with PSCR on testing new technologies.

FirstNet seeks input from representatives of state, local, and tribal governments and public safety organizations who serve on its Public Safety Advisory Committee (PSAC). The PSAC consists of 40 members who represent public safety organizations from all disciplines of public safety as well as State, territorial, tribal, and local governments. There are also at-large members and a Federal member. This advisory committee provides its advice to help ensure FirstNet delivers a network that meets the needs of public safety. The mission of the PSAC is to assist FirstNet in carrying out its duties and responsibilities. Specifically, the PSAC:

- Offers FirstNet guidance, information, and subject matter expertise, from a public safety perspective, to ensure that needs, requirements, and operational constructs necessary for critical public safety capabilities are included in the envisioned network
- Provides subject matter expertise on concepts (e.g., policies, procedures, technologies, operational methods) developed by FirstNet
- Advises FirstNet through creating concept documents or recommendation reports related to the build out, deployment, and operation of the NPSBN
- Conducts regular meetings to remain informed and up to date on FirstNet's progress

About Arizona FirstNet

Arizona FirstNet creates and sustains relationships with Arizona stakeholders and FirstNet to influence the State Plan for Arizona, ensure public safety and public service requirements are met, and facilitate informed decision making. In doing so, taxpayer funds are used judiciously and efficiently. Arizona FirstNet works in collaboration with federal, regional, tribal, and local jurisdictions, on planning, consulting, and development activities in preparation for consultations with FirstNet. Arizona FirstNet is tasked with:

- Informing Arizona agencies/jurisdictions of the project timeline, progress and the impacts of the new technology on current operations and possible participants.
- Collecting State, tribal and local requirements, coverage, infrastructure, critical infrastructure and special circumstances
- Working with FirstNet on assuring Arizona's requirements are communicated and to assist in figuring how to meet the statewide needs
- Assessing whether the State Plan supplied by FirstNet is adequate for statewide needs

To accomplish these tasks, Arizona received a \$2.9M grant as part of the State and Local Implementation Grant Program to perform Education & Outreach, Data Collection, and Consultation activities.

Education & Outreach

Arizona's Education and Outreach program focuses on direct stakeholder engagement and interaction, through open public meetings, an active regularly updated website, and other regular electronic and in-person communication. The program encourages and coordinates collaborative efforts to help identify and address local, regional and state barriers to the planning and adoption of FirstNet. Arizona FirstNet education and outreach activities include:

- Assessing stakeholders awareness of FirstNet, comprehension & purchase intent
- Communicating FirstNet developments, decisions, actions and implications for Arizona
- Collecting and submitting stakeholder comments on FirstNet related federal Public Notices and draft RFP's
- Facilitating collective stakeholder opinion on planning and development decisions

Data Collection

Arizona FirstNet is collecting specific data from Arizona stakeholders which will be incorporated into FirstNet's network design RFP and the development of the State Plan. This will ensure the network is built to meet the needs of Arizona public safety agencies. The specific data requested includes how public safety currently uses wireless, where coverage is needed, and who should be allowed on the network in support of public safety. The data collection effort is being conducted through meetings with stakeholders, online surveys, and other collection methods.

Examples of quantitative data being collected from primary and secondary sources include:

- Agency, personnel and device counts
- Incident location, type, and intensity
- Critical infrastructure, major planned event and seasonal population shift locations
- Detailed data usage/traffic profiles
- Agency operational areas
- Commercial wireless data service incidence

Consultation

The law that established FirstNet requires it to consult with federal, state, tribal, and local public safety entities to ensure that the FirstNet network is designed to meet the needs of public safety across the country. Arizona FirstNet will engage in a collaborative process as part of our consultation with FirstNet that involves key stakeholders and leadership from State, tribal, and local public safety representatives. State and local planning consultation topics will include:

- Construction of a core network and any RAN build-out
- Placement of towers
- Capacity and coverage areas of the network, whether at the regional, state, tribal, or local levels

- Adequacy of hardening, security, reliability, and resiliency requirements
- Assignment of priority to local users
- Assignment of priority and selection of entities seeking access to or use of the nationwide interoperable public safety broadband network and training needs of local users.

Arizona FirstNet will successfully complete the consultation process with FirstNet to ensure the negotiated State plan accurately represents the needs and interests of Arizona stakeholders.

Governance

Background and Structure

A multi-level information sharing and collaboration structure governs Arizona’s public safety communications community (See *Figure 1: Arizona Organizational Model*). As it relates to FirstNet and the development of the Nationwide Public Safety Broadband Network (NPSBN), this structure consists of the Arizona FirstNet team, the Arizona Public Safety Wireless Broadband Network Workgroup (AZPSBN), the Statewide Interoperability Executive Committee (SIEC) and associated workgroups, and an executive group comprised of key Agency Directors and Policy Advisors to the Governor that are kept informed of developments and progress.

Arizona FirstNet also teams with the State 9-1-1 Program Office, the Digital Arizona Program, and other State agencies to ensure coordination of efforts and consistent messaging as each program promotes the expansion of broadband capability and engages with FirstNet stakeholders through their respective initiatives. In addition, other state-level organizations, such as associations for Police and Fire Chiefs, are involved through our governance groups and outreach efforts.

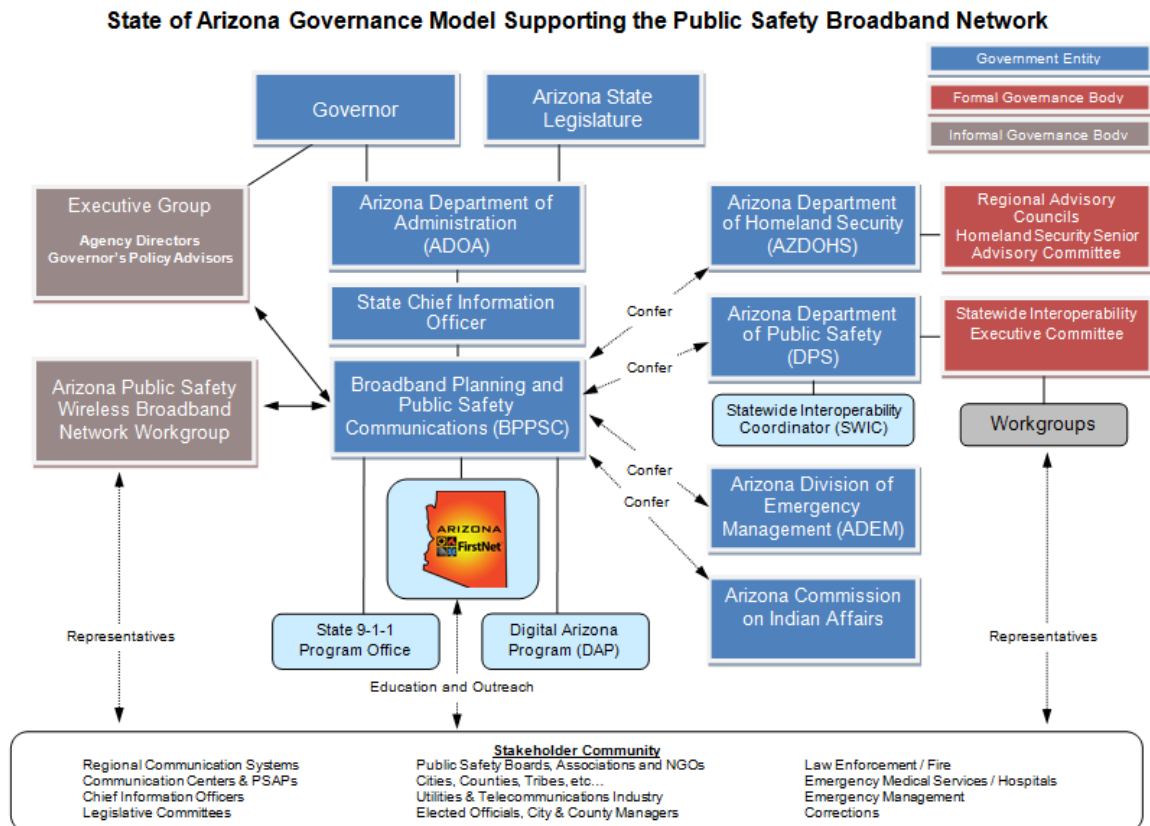


Figure 1: Arizona Organizational Model

Arizona Public Safety Wireless Broadband Network Workgroup

The AZPSBN Workgroup¹ was formed April 17, 2012 to develop statewide standards related to the NPSBN (See *Appendix B: AZPSBN Charter*). They work with the Arizona FirstNet team and the Arizona public safety community to develop an inclusive plan for managing the State and Local Implementation Grant Program (SLIGP), and the requirements for the build-out of Arizona's Radio Access Network (RAN) and connection to the NPSBN. The workgroup provides advice, direction and operational knowledge on a wide variety of topics. The AZPSBN has been meeting consistently since formation to provide advice on the implementation of the State and Local Implementation Grant Program and prepare for interactions with FirstNet. *Appendix D: AZPSBN Workgroup Meetings* summarizes the meeting date and primary subjects of each Workgroup meeting.

The AZPSBN is composed of 71 representatives from a cross-section of disciplines to assist our Arizona FirstNet efforts (See *Figure 2: Count of Workgroup Members by Discipline*). The workgroup represents fire, law enforcement, emergency medical services (EMS), emergency managers, elected officials, etc. The workgroup includes practitioners from traditional public safety disciplines and also includes technically oriented operational staff with land mobile radio (LMR) and wireless broadband knowledge. Additionally, the workgroup includes executive managers of large fee-based radio systems to assure input on possible business models for Arizona's broadband network.

The full membership is listed in *Appendix C: Arizona Public Safety Wireless Broadband Network Workgroup*.

¹ <https://azfirstnet.az.gov/about/azpsbn>

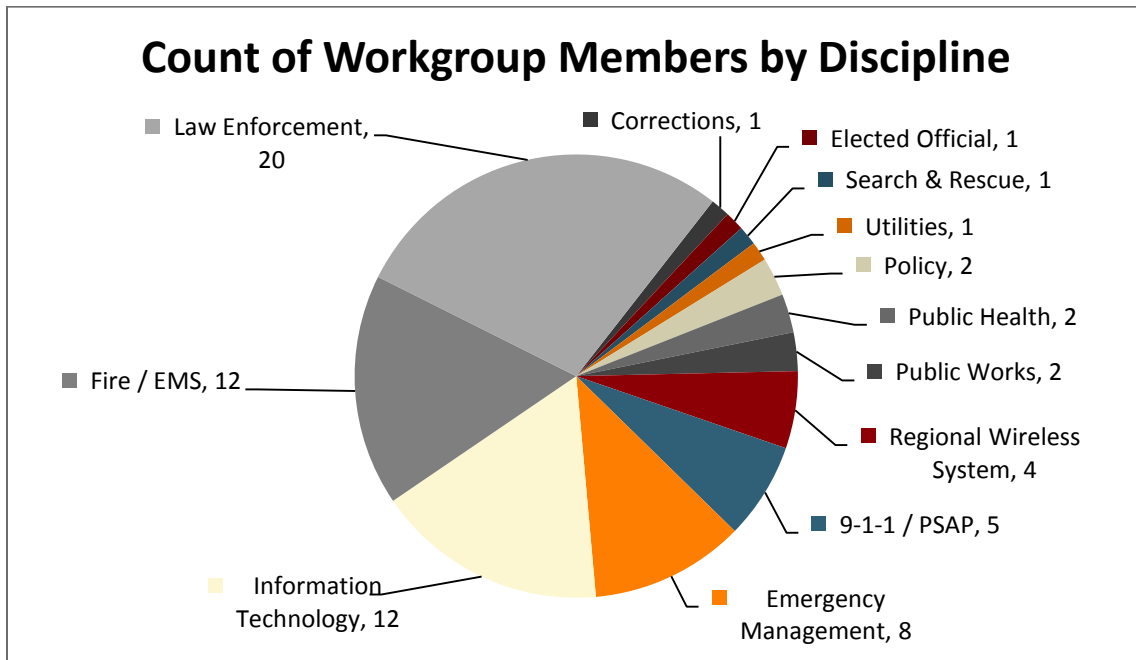


Figure 2: Count of Workgroup Members by Discipline

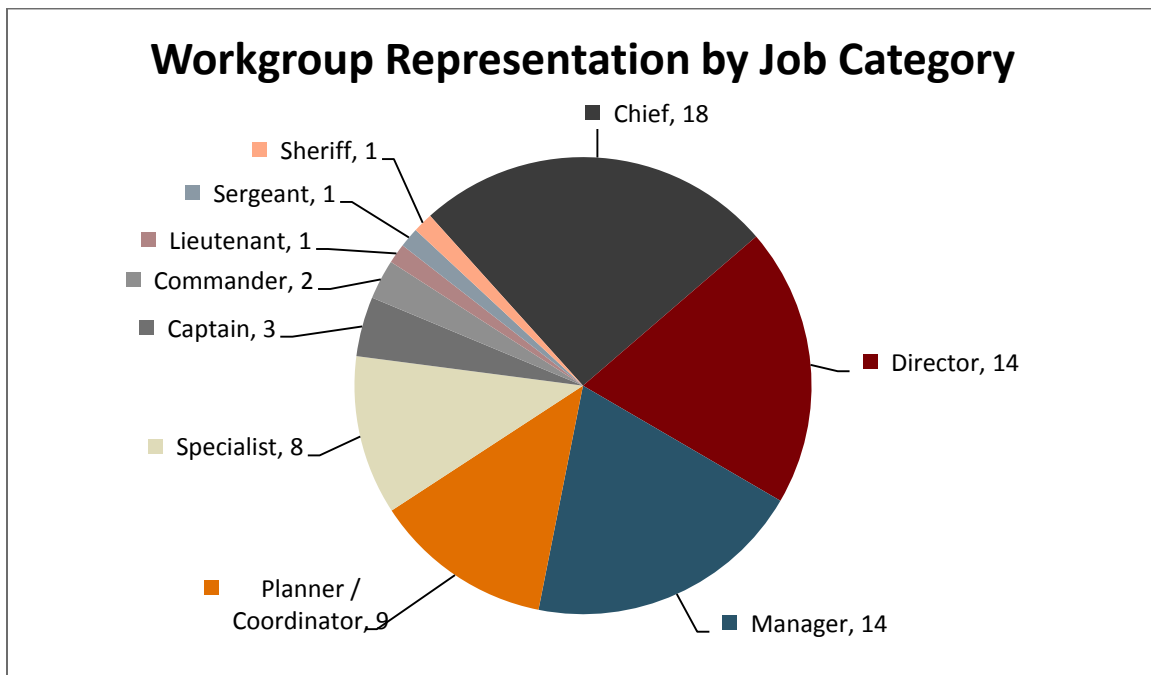


Figure 3: Workgroup Representation by Job Category

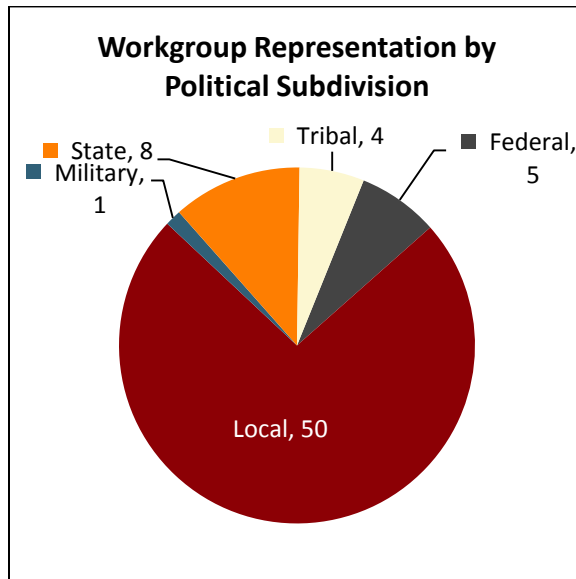


Figure 4: Workgroup Representation by Political Subdivision

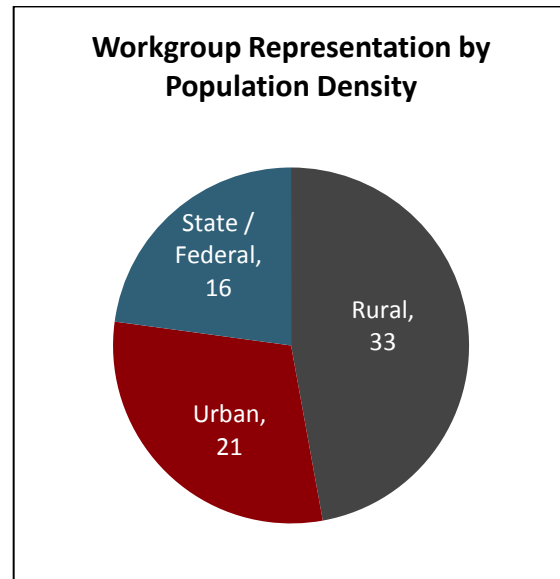


Figure 5: Workgroup Representation by Population Density

Table 2: AZPSBN Workgroup Representation by County

County	# of Workgroup Members
Apache	2
Cochise	2
Coconino	3
Gila	2
Graham	1
Greenlee	2
La Paz	1
Maricopa	17
Mohave	2
Navajo	2
Pima	4
Pinal	3
Santa Cruz	2
Yavapai	2
Yuma	5

Table 3: Workgroup Representation of Wireless Systems and Associations

Regional Wireless Systems Represented:	Associations Represented
Regional Wireless Cooperative	Arizona Association of Chiefs of Police
Yuma Regional Communications System	County Supervisors Association
Pima County Wireless Integrated Network	Arizona Fire Chiefs Association
TOPAZ Regional Wireless Cooperative	Arizona Fire Districts Association
	Arizona Sheriff's Association
	Arizona Chief Information Officers

Executive Group

After Public Law 112-96² was passed, Arizona FirstNet met on March 13, 2012 with several of the Governor's policy advisors, along with representatives from Arizona Department of Homeland Security (AZDOHS), Arizona Department of Public Safety (DPS), the Statewide Interoperability Coordinator (SWIC) and the office of the State Chief Information Officer (CIO) to review the legislation and Arizona's planned approach to provide the best opportunity for its public safety agencies and their tribal partners to benefit from the planned network. At that time, it was determined the Office of the State CIO would serve as the Single Point of Contact (SPOC) for Arizona's participation in the NPSBN. As the grant program progressed, the Arizona FirstNet team sent periodic NPSBN updates to these executives.

Arizona's Governor, Douglas A. Ducey, was sworn in on January 5, 2015. With the change in administration, Arizona FirstNet is reaching out to representatives of the new administration and newly appointed Directors to discuss expanding our Executive Group. *Table 4: Proposed Executive Group Members* identifies the current leadership of State agencies we anticipate briefing on an on-going basis throughout the consultation process.

Table 4: Proposed Executive Group Members

Name	Title	Agency
Gilbert Orrantia	Director	AZDOHS
Frank Milstead	Director	DPS
Kevin Donnellan	Acting Director	ADOA
Wendy Smith-Reeves	Director	Arizona Division of Emergency Management (ADEM)
Joe Cuffari	Public Safety Policy Advisor	Office of the Governor
Rene Guillen	Government and Transportation Policy Advisor	Office of the Governor
Kristine Fire Thunder	Native American Affairs Policy Advisor	Office of the Governor
Mike Lettman	Acting State CIO & Deputy Director	ADOA
Gary Hensley	Assistant Director & Chief Enterprise Integration Officer	ADOA
Susan Dzbanko	Assistant Director	AZDOHS
Jeff Raynor	Assistant Director	DPS
Kevin Rogers	Manager	Arizona DPS, Wireless Systems Bureau
Jeremy Knoll	Statewide Interoperability Coordinator	DPS
Matthew Hanson	Statewide Grants Administrator	Arizona Office of Grants and Federal Resources

² <http://www.gpo.gov/fdsys/pkg/PLAW-112publ96/pdf/PLAW-112publ96.pdf>

Statewide Interoperability Executive Committee

The SIEC is a technical and operational advisory committee consisting of two co-chairs and three additional members. The SIEC has authority over 700 Megahertz (MHz), Very High Frequency (VHF), and Ultra High Frequency (UHF) interoperability frequencies in Arizona. The SIEC hosts meetings and forms workgroups, where they encourage broad participation of public safety and public service agencies and organizations in these workgroups. All SIEC meetings are publicly noticed and conducted in accordance with Arizona open meeting laws³. Public meeting minutes from past SIEC meetings are posted online.

Arizona FirstNet works with the SIEC to encourage and coordinate collaborative efforts, and to identify and address local, regional, and state barriers to planning and adoption of FirstNet. The SIEC has been receiving updates on the use of broadband for public safety and the status of the NPSBN initiative at public meetings since October 2010. Coordinating with the SIEC enables the Arizona FirstNet team to understand the needs, desires, limitations and requirements of Arizona's public safety and public service agencies. Arizona FirstNet works with the SIEC to ensure the NPSBN is included as part of Arizona's Statewide Communications Interoperability Plan (SCIP)⁴.

Table 5: SIEC Members

Name	Title	Agency
Mark Venuti (Co-Chair)	Director	Guardian Medical Transport
Mike Sacco (Co-Chair)	Captain	Pima County Sheriff's Department
Jesse Cooper	Acting Bureau Administrator/ Information Technology (IT) Project Manager	Phoenix Police Department, Communications Bureau
Jeremy Knoll	Telecommunications Systems Maintenance Supervisor	Arizona Department of Public Safety
Pete Weaver	Director	Maricopa County Department of Emergency Management

SIEC Workgroups

The SIEC is supported by a Technical Workgroup and an Operational Workgroup composed of numerous volunteers from public safety and public service agencies and organizations. The Technical Workgroup evaluates and makes recommendations from a technical perspective to the SIEC on policies, standards and procedures. Examples of issues tasked to this workgroup include concerns surrounding spectrum management and utilization of the Communication

³ A.R.S. § 38-431.01

⁴ <https://casmnextgen.com/pslib/index.php/webview?docid=45>

Assets Survey and Mapping (CASM) tool⁵. The Operational Workgroup evaluates and makes recommendations from an operational perspective to the SIEC on Memoranda of Understanding (MOUs), Standard Operating Procedures (SOPs), training and exercises, and outreach initiatives.

Homeland Security Committees

The Arizona FirstNet team makes regular presentations to the Homeland Security Senior Advisory Committee (SAC) and the five Regional Advisory Councils (RACs) on FirstNet activities, SLIGP progress, and other initiatives related to building the NPSBN. AZDOHS sends key updates issued by the Arizona FirstNet team to the RACs and other stakeholders. Furthermore, a member of the Arizona FirstNet team participates in the AZDOHS Interoperability Working Group (IWG) to review grant applications for communications equipment and ensure interoperability and conformance with the State's SCIP.

Homeland security funding is a critical component of local agencies efforts to sustain and enhance communications capabilities. Arizona public safety stakeholders rely on the homeland security funding process outlined below to coordinate funding decisions and establish priorities. These funding and decision-making structures will play a key role in the agency decision-making process during the implementation of FirstNet.

Homeland Security Senior Advisory Council

The SAC was established in accordance with Arizona Revised Statute (ARS) § 41-4254 and 41-4256 and Federal Department of Homeland Security Grant Guidance/Funding Opportunity Announcement. The members consist of the Director of the AZDOHS, four legislative members and seventeen other advisory members who are appointed by the governor pursuant to ARS § 38-211. The key strategic initiative of the SAC is to foster preparedness and collaboration across disciplines in the private sector, non-profit organizations, faith-based communities, and all levels of government, including local, state, and tribal. This also fulfills the goal of maximizing coordination and reducing duplication of efforts. The SAC encourages the leveraging of various funding sources to enhance state, local, and tribal capabilities in support of the State Homeland Security Strategy, Threat Hazard Identification Risk Assessment, and the State Preparedness Report.

⁵ <https://casmnextgen.com/>

The Senior Advisory Council is composed of:

- Homeland Security Advisor, Director, AZDOHS
- State Emergency Management Director, ADEM
- State Public Health Officer, Director Arizona Department of Health Services
- State Public Safety Officer, Director DPS
- State Administrative Agency (SAA) for Justice Grants, Executive Director, Arizona Criminal Justice Commission
- Statewide Interoperability Coordinator, DPS
- State Department of Economic Security, Director
- State Juvenile Corrections, Director
- State Citizen Corp Council, Chair
- Republican State Senator
- Democratic State Senator
- Republican State Representative
- Democratic State Representative
- League of Cities and Towns Representative
- Arizona Commission of Indian Affairs, Executive Director
- County Sheriff's Association Representative
- State Fire Marshall
- Fire Chief's Association Representative
- Association of Police Chiefs Representative
- Tucson Urban Area Security Initiative Coordinator
- Phoenix Urban Area Security Initiative Coordinator

Regional Advisory Councils

Pursuant to § 41-4258 of the Arizona Revised Statutes, the Homeland Security RACs are tasked with developing, implementing, and maintaining regional homeland security initiatives in each of the five Homeland Security Regions. The regions, grouped politically around county boundaries, represent Arizona's geographical divisions for planning and coordination purposes (as shown in *Figure 6: Arizona Homeland Security Regions*). RACs collaborate with tribal representatives, organizations and other councils and commissions to ensure the successful integration of homeland security programs and initiatives, including communications initiatives.

Each Homeland Security RAC is composed of:

- A fire service representative from an urban or suburban area within the region
- A fire service representative from a rural area in the region
- A police chief
- A county sheriff
- A tribal representative
- An emergency manager
- A mayor
- A county supervisor
- A representative from DPS
- A public health representative
- Four at-large positions



Figure 6: Arizona Homeland Security Regions

Arizona Commission on Indian Affairs (ACIA)

Tribal nations are an important FirstNet constituency in Arizona. The state contains 22 federally recognized Native American Tribes. Seven of these tribes are multi-state tribes with territory in California, Nevada, New Mexico, Utah, or Mexico. There are six tribally owned and operated telecommunications companies in Arizona.

The ACIA works to encourage a spirit of cooperation to guide the continuing government-to-government relationship between the State of Arizona, tribal nations and communities located in Arizona. The ACIA ensures meaningful and timely consultation with tribal leaders to facilitate better understanding, informed decision making, and intergovernmental cooperation. The ACIA encourages a spirit of cooperation and collaboration among state agency tribal liaisons to ensure that state services and resources are available to all eligible citizens in Arizona tribal communities.

The ACIA consists of twenty members, including seven Indian and four at large Commissioners appointed by the Governor, and nine Ex-Officio members who serve by the virtue of their office.

Pursuant to A.R.S. § 41-542, the Commission shall assist and support state and federal agencies in assisting Indians and tribal councils in this state to develop mutual goals, to design projects for achieving goals and to implement their plans.

Federal & Regional Governance Groups

Arizona FirstNet participates in several regional groups working to advance public safety communications, including FirstNet related initiatives.

Southwest Border Communications Working Group (SWBCWG)

The Southwest Border Communications Working Group (SWBCWG) works to identify and leverage infrastructure-sharing opportunities and enhance interoperability among federal, state, local, and tribal agencies along the U.S.—Mexico border.

As part of the Office of Emergency Communication's (OEC) role in providing support to agencies in establishing interoperable emergency communications, OEC initiated the SWBCWG in August 2008 to serve as a forum for agencies in Arizona, California, New Mexico and Texas to share information on common issues, collaborate on existing and planned activities, and facilitate federal involvement in multi-agency projects within the Southwest Border Region. The SWBCWG builds partnerships among emergency communications practitioners in the Southwest Border region, identifies best practices and lessons learned for border area communications, and shares information regarding key regulatory issues impacting emergency communications in the border region. This includes initiatives related to FirstNet, such as addressing the unique challenges FirstNet will face in the region (See *Appendix J: Southwest Border Region Considerations for Nationwide Public Safety Broadband Network Planning and Development*).

Information sharing and discussions include a wide range of border issues such as intentional radio interference by Mexican cartels, New Mexico's Broadband Technology Opportunities Program (BTOP) program, Harris County Texas's Broadband Interoperable Gateway Network (BIG-NET) LTE network lessons learned, potential frequency interference between U.S. and Mexican public safety authorities, and information sharing between state FirstNet representatives on education/outreach efforts.

Additional Organizations

The Arizona FirstNet team participates in numerous other federal, regional, and national organizations involved in public safety voice and data communications to ensure we are kept informed of FirstNet developments, progress, and lessons learned by other states. These groups include:

- Federal Emergency Management Agency (FEMA) Region IX Regional Emergency Communications Coordination Working Group (RECCWG)
- National Public Safety Telecommunications Council (NPSTC)
- Association of Public Safety Communications Officials (APCO) Workgroups
- National Native American Law Enforcement Association
- National Council of Statewide Interoperability Coordinators (NCSWIC)
- OEC Region IX Regional Interoperability Council
- Western States—An informal group of SPOC's from Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Stakeholder Community

The stakeholders involved in planning, education and outreach for the NPSBN involve all members of the public safety community (See *Figure 1: Arizona Organizational Model*). Arizona considers the broader public safety stakeholder community to include law enforcement agencies, fire departments, EMS agencies, correctional institutions, as well as other municipal, county, state, tribal, and federal agencies performing public safety or public service activities. In addition, Arizona includes non-governmental organizations (NGOs) that perform public safety or public service activities.

Example members of the stakeholder community include, without limitation:

1. First Responders
2. Public Health, Healthcare, and Emergency Medical Services
3. Emergency Managers
4. Law Enforcement, Corrections, Fire & EMS Executive, Operational and Technical/Communications Staff
5. Communication Center and Public Safety Answering Point (PSAP) Managers and Staff
6. NGOs with a public safety or public service mission (ex: American Red Cross, Salvation Army, Arizona Voluntary Organizations Active in Disasters, Raytheon Fire Department (Tucson), Private Prisons, etc.)
7. Elected Officials
8. City and County Managers
9. Public Safety & Government Boards and Associations at the state and local level
10. Regional System Administrators
11. Regional and Border Initiative Participants—federal, multi-state, local, and tribal
12. Public Information Officers
13. Public Utilities
14. Telecommunication Providers
15. State Legislative Committees: House Military & Public Safety, Senate Public Safety, Military & Technology

Education and Outreach

Overview

This section summarizes Arizona FirstNet's overall goals, strategies and activity metrics for interacting with our stakeholders. Arizona's education and outreach program focuses on direct stakeholder engagement and interaction, through open public meetings, an active regularly updated website, and other regular electronic and in-person communication. The program encourages and coordinates collaborative efforts to help identify and address local, regional and state barriers to the planning and adoption of FirstNet. The goal is to:

- Enable the Arizona FirstNet team to understand the needs, desires, assumptions, constraints and expectations of Arizona's public safety and public service agencies.
- Identify mechanisms by which important FirstNet information can be shared with all stakeholders.
- Identify and collect local agency requirements and issues.

Arizona's "High-Touch, High-Tech" outreach strategy puts a priority on focused in-person meetings supplemented by online social media tools and other electronic communication tools. To date, the Arizona program has conducted extensive education and outreach activities among local public safety agencies, tribes and local governments in preparation for the initial State Consultation by FirstNet staff. The following activities are being conducted and are further detailed in the subsections below:

- Overview briefings providing high-level information about FirstNet at county-level kickoff meetings
- 9-1-1 Public Safety Answering Point Systems Administrator briefings
- State and local public safety association briefings.
- Local area outreach meetings focused on developing a detailed understanding of user needs and requirements.
- Development and implementation of tribal briefings
- Development and implementation of a non-public safety stakeholders program (e.g. business management, finance, information technology, etc.).
- Website and social media postings, as well as information distributed via email.

The Arizona public safety community has received updates on the status of the NPSBN initiative since September 2010, with activities drastically increasing after the SLIGP grant was awarded. Since then, the Arizona FirstNet Program has travelled over 11,322 miles during 49 trips across Arizona to conduct or attend over 115 meetings. The approximate location and number of meetings are depicted in *Figure 7: Arizona FirstNet Education & Outreach Activities*. At these meetings, over 3,000 handouts have been distributed to 2,245 stakeholders during 2,414 outreach hours. *Figure 8: Stakeholder Contacts by Meeting Type* provides a high-level breakdown of these stakeholder contacts. A list of outreach and education meetings can be found in the sections below that further describe each outreach activity. The information

gathered from these meetings is reflected throughout this report, particularly in the Arizona Overview, Arizona Public Safety Highlights, Barriers to Participation and Adoption of FirstNet, and the Legal Barriers sections.

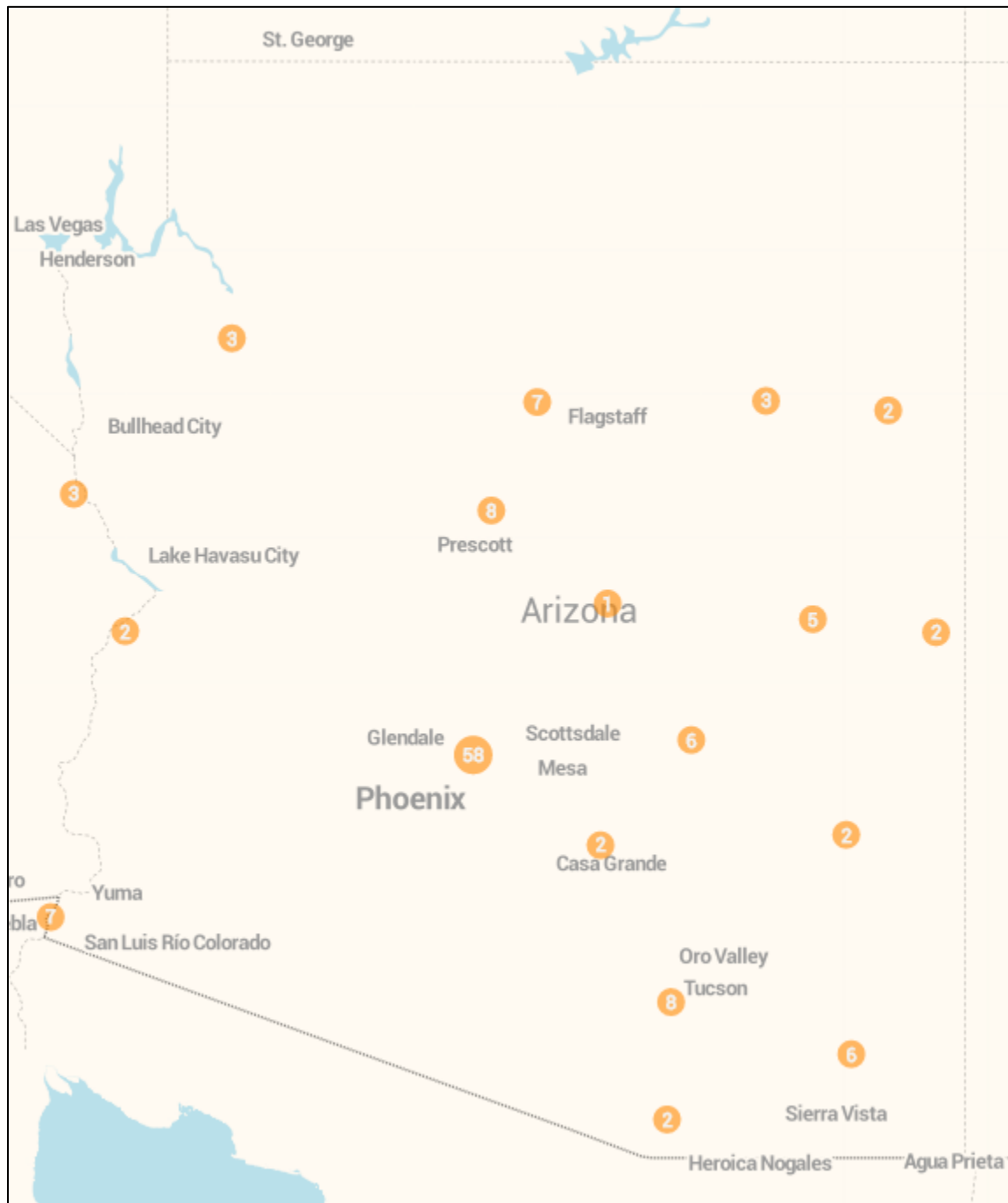


Figure 7: Arizona FirstNet Education & Outreach Activities

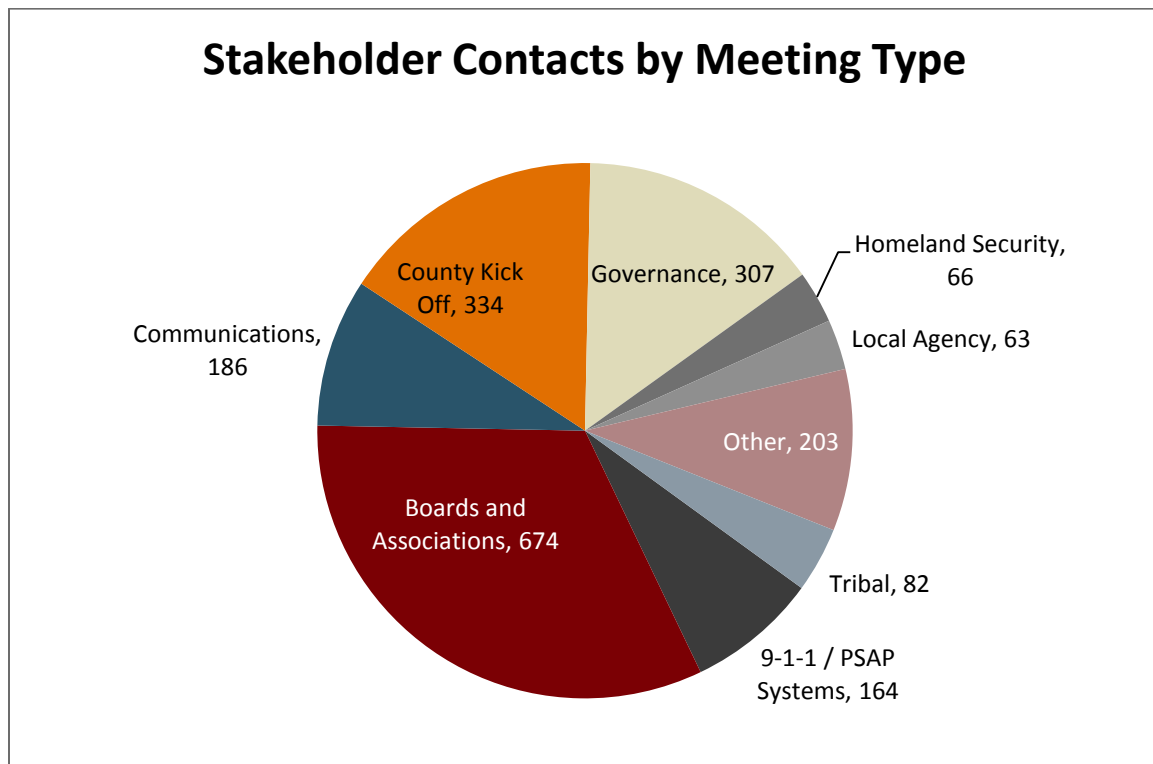


Figure 8: Stakeholder Contacts by Meeting Type

Activities

County Level Kickoff Meetings

Arizona FirstNet kickoff meetings were held in each of the state's 15 counties, with 361 stakeholders attending. Invitations to the kickoff meetings were sent to all stakeholders on our email distribution list, including decision makers, operational, and technical personnel. While each meeting was tailored to the specific county, the agendas were comparable and followed the traditional format used for FirstNet introductory meetings:

- Introductions (name/agency)
- Nationwide Public Safety Broadband Network—Overview of the network, history, legislation, and high-level 3GPP standards.
- About FirstNet—Compilation of FirstNet Board of Directors, Public Safety Advisory Committee (PSAC), FirstNet Goals and Principles.
- Secondary Users—Open Discussion with attendees to determine who they work with on a daily basis and how they believe these entities should be able to access the network.
- Arizona FirstNet Program—SLIGP Grant Guidelines, Outreach and Education plans (past/future), Overview of AZPSBN Workgroup, Arizona Tribal Overview.
- Consultation Process—Overview of FirstNet preliminary and state plan process, different phases to get to the State Plan.
- Agency Information and Validation—Discussion of strategies to identify all public safety agencies and document details about the agencies needed for FirstNet planning.

- Coverage—Overview of coverage maps provided by OEC for Arizona and considerations to accomplish coverage. Discussion with attendees to determine additional coverage considerations based on local agency priorities.
- Critical infrastructure—Open discussion on the critical infrastructure in Arizona and the specific coverage objectives needed by public safety to support the infrastructure.
- Collecting Arizona input, opinions and concerns—Request attendees to provide their thoughts on the FirstNet program and the presentation.

All meetings include handouts and some or all of the following (see *Appendix E: Arizona FirstNet Outreach Materials*):

- Agenda
- In-Kind Contribution
- Survey forms: Secondary Users, Agency Validation and Coverage Objectives
- Evaluation Form
- Meeting Schedule
- FirstNet Board and PSAC Members
- Agency List (county specific)
- FirstNet Handouts (Law Enforcement, Fire, Emergency Medical Services, Elected Officials, Land Mobile Radio)
- Arizona FirstNet Tri-fold Brochure and About Arizona FirstNet Brochure

Table 6: County Level Kickoff Meetings

Meeting	Date	Attendees
Gila County	05/23/2014	13
Apache County	05/28/2014	11
Navajo County	05/29/2014	15
Graham/Greenlee Counties	06/09/2014	15
Maricopa County	06/10/2014	90
Mohave County	06/14/2014	20
La Paz County	06/17/2014	6
Yuma County	06/18/2014	27
Cochise County	06/25/2014	21
Pinal County	07/02/2014	26
Pima County	07/07/2014	40
Santa Cruz County	07/08/2014	15
Yavapai County	07/14/2014	23
Coconino County	07/15/2014	39
Total		361

9-1-1 Public Safety Answering Point Managers Meetings

We leveraged our working relationship with the State 9-1-1 Office to present FirstNet information to the 9-1-1 PSAP Managers at their quarterly meetings to assure they were aware of FirstNet and the possible impacts on their daily operations. 9-1-1 personnel are acutely aware of the daily operations of their organization, since most calls for service and events are handled by their centers. Attendees at these meetings were able to share information about what devices were in use in their organization, as well as what type of events or incidents could impact data operations. We also reviewed the relationship between FirstNet and future Next Generation 9-1-1 (NG9-1-1) capabilities.

PSAP Managers and supervisors shared concerns about the potential for workload overload. Currently PSAPs are staffed to handle basic voice and data. With FirstNet comes the ability to provide additional data such as photos, videos, biometric and sensor monitoring. This new data comes with a new associated workload for the PSAP and a need to review policies/procedures and to increase training. PSAPs understand the need to keep up with the technology changes to evaluate the impact on their centers. There is also recognition of the potential impact on telecommunicators, when receiving graphic video and photos and the need to provide critical incident stress training and to provide crisis intervention on PSAP personnel.

Table 7: PSAP Managers Meetings

9-1-1 PSAP Managers Meetings	Date	Attendees
Pinal County	07/29/2014	14
Cochise County	09/10/2014	13
Yavapai County	09/24/2014	17
Maricopa County	10/09/2014	34
Gila County	11/12/2014	10
Mohave/LaPaz County	11/13/2014	12
Yuma County	11/20/2014	15
Pima County	12/03/2014	22
Coconino County	01/20/2015	27
Total		164

Public Safety Association Meetings

To reach a broader and in some cases, more discipline specific audience, we have reached out to public safety associations, both at a regional and statewide level to discuss FirstNet. Regional meetings have provided an avenue for discussions to identify specific details within a focused area. We have been given the opportunity to speak to large groups at association conferences during board meetings and break-out sessions. We have also taken advantage of vendor expos to staff a table and hold one-on-one conversations with attendees. This has allowed more focused conversations to share more in-depth details about FirstNet and to identify how data networks are currently being used, as well as the challenges that they agencies have in their jurisdictions.

Table 8: Public Safety Association Meetings

Meeting	Date	Attendees
Statewide Interoperability Executive Committee	10/15/2013	20
Public Safety Communications Advisory Commission	11/19/2013	21
Statewide Interoperability Executive Committee	01/21/2014	33
Valley Fire Partners	03/20/2014	35
APCO Western Regional Conference—AZ	05/07/2014	20
Arizona Fire District Association	06/27/2014	Expo Table
Arizona Ambulance Association	07/24/2014	8
La Paz County Fire Chiefs Association	08/11/2014	12
RECCWG	08/12/2014	7
FirstNet's Technology Partnerships and the Benefits to Cities and Public Safety	08/21/2014	26
Arizona Association of Chiefs of Police	09/10-11/14	167
Phoenix Fire Computer Aided Dispatch (CAD) Consortium Meeting	11/13/2014	30
International Association of Law Enforcement Planners—Southwest Chapter	11/18/2014	17
County Sheriff's Association	12/04/2014	20
Arizona APCO Quarterly Meeting	12/19/2014	21
Arizona Fire District Association	01/16-17/15	20
AZ Fire Chief Expo	03/25-26/15	Expo Table
Yuma Local Emergency Planning Committee	04/09/2015	21
Total		478

Regional Land Mobile Radio System Board Meetings

We met with each of the Regional Land Mobile Radio System Boards to introduce the FirstNet program and initiative. Board members typically are high-level decision makers in the agencies participating in the regional system. These meetings are also attended by the operational and technical communications staff and radio system administrators. These groups are closely following the status of FirstNet's progress. Primary concerns raised during these meetings included the need for more details about costs, budget and schedule for deployment.

Table 9: Regional LMR System Board Meetings

Meeting	Date	Attendees
Regional Wireless Cooperative (RWC) Board Meeting	11/21/2013	28
Regional Radio System Administrators Meeting	12/09/2013	14
Pima County Wireless Integrated Network Meeting	12/12/2013	21
Topaz Regional Cooperative (TRWC) Board Meeting	01/23/2014	20
Yuma Regional Communications System (YRCS)	01/30/2014	22
Total		105

Local Area Outreach

In December 2014 we began a second round of meetings targeting local agencies throughout the state as a follow on to our County-level meetings. This round of meetings incorporates data received during the initial County Level Kickoff Meetings and targets agencies not in attendance at previous meetings.

Targeted local agencies located within a close radius of the meeting location were personally contacted by phone and extended an invitation to attend the meetings. In several cases, this required a personal high-level overview of FirstNet prior to any commitment. These smaller meetings are intended to encourage more interaction with attendees for feedback about FirstNet, generally, and their requirements and considerations for the network deployment, specifically. The feedback received during these meetings was consistent with feedback during the initial County Kick-off meetings.

Table 10: Local Outreach Meetings

Meeting	Date	Attendees
Williams	12/16/2014	7
Flagstaff	12/16/2014	20
Holbrook	12/17/2014	12
Springerville	12/17/2014	13
Show Low	12/18/2014	11
Tucson	03/23/2015	15
Sierra Vista	03/24/2015	11
Total		89

Homeland Security Meetings

The Regional Advisory Councils (RACs) were developed through the Arizona Department of Homeland Security to prioritize and manage the distribution and use of grant funds from the Department of Homeland Security. The Homeland Security Senior Advisory Committee (SAC) encourages the leveraging of various funding sources to enhance state, local, and tribal capabilities in support of the State Homeland Security Strategy, Threat Hazard Identification Risk Assessment, and the State Preparedness Report. During presentations at RAC and SAC meetings, we provided an overview of both the nationwide FirstNet plan and the Arizona FirstNet Program.

Table 11: Senior Advisory Committee & Regional Advisory Council Meetings

Meeting	Date	Attendees ⁶
North RAC	01/15/2013	--
South RAC	01/17/2013	--
West RAC	01/24/2013	--
East RAC	01/31/2013	--
Central RAC	02/07/2013	--
Senior Advisory Committee	04/02/2013	--
West RAC	12/03/2013	--
North RAC	12/04/2013	--
Central RAC	12/05/2013	--
East RAC	12/12/2013	--
South RAC	12/13/2013	--
Senior Advisory Committee	01/24/2014	24
East RAC	08/14/2014	15
North RAC	08/18/2014	16
West RAC	08/26/2014	21
Central RAC	08/28/2014	14

Tribal Outreach

Arizona began outreach to the 22 tribal nations in Arizona with two letters sent to each tribe in March and September of 2013 to ensure tribes were aware of our activities and to invite tribes to participate in our efforts. Since those initial efforts, interactions with tribal representatives in Arizona have been through tribal association meetings, tribal public safety meetings, tribal stakeholders attending Arizona FirstNet education and outreach meetings, and tribal member agencies attending regional radio system meetings.

Our office works in close collaboration with the AZDOHS Tribal Liaison to introduce our team members to tribal members and entities, and to assist in coordinating the Arizona FirstNet team for presentations at tribal meetings. This relationship has been beneficial in growing our tribal outreach program. As discussed in the eNewsletter section below, our e-mail distribution list of 1,500 includes 119 stakeholders from 18 of the State's 22 Tribes. Also represented are stakeholders from the Inter-Tribal Council of Arizona (ITCA) and the Arizona Commission of Indian Affairs.

Representatives from twelve tribes have attended various Arizona FirstNet education and outreach presentations. A list of specific tribal meetings can be found in *Table 12: Tribal Meetings*. One such meeting was with the Arizona Commission of Indian Affairs, which is

⁶ Information on stakeholder attendance at certain meetings prior to award of the SLIGP grant is not available.

comprised of 20 Commissioners, including seven Indian and four at large members appointed by the Governor and nine Ex-Officio members who serve by virtue of their office. At this meeting, we provided a well-received overview of FirstNet to the Commission. This meeting also sparked the opportunity to present to tribal law enforcement leaders from throughout the state at the Indian County Intelligence Network (ICIN) meeting. In turn, an opportunity to present at the Tribal Emergency Manager's meeting came from this ICIN meeting. Additionally, through our relationship with the Governor's Arizona Commission of Indian Affairs Executive Director, they have begun sharing Arizona FirstNet news and meeting notices with their members to support our tribal education and outreach.

Other tribal outreach includes a fully engaged meeting with the Gila River Indian Community consisting of representatives from law enforcement, fire, EMS, transportation, education, public works, public health, emergency management and the Tribal Council. We have also met with the Ft Mojave Indian Tribal Council, which included representation from Ft Mojave Telecommunications, Inc., Ft Mojave Indian Tribe Department of Emergency Response, and the Ft Mojave Tribal Police Department. Members of the Arizona FirstNet team also took a tour of the Salt River Pima-Maricopa Indian Community 9-1-1 center and briefed center management on the FirstNet program.

We will continue to engage each tribe in future meetings. We are also reaching out to the FirstNet Tribal Outreach Branch Chief to attend meetings with the Arizona FirstNet team, and each of the tribes around the state, requesting attendance from potential FirstNet users within the tribes.

Table 12: Tribal Meetings

Meeting	Date	Attendees ⁷
Homeland Security Information Seminar For Tribes	06/11/2013	--
Gila River Indian Community	12/30/2013	12
Tribal Telecom & Technology Summit	02/10/2014	10
Bureau of Indian Affairs—Tribal Assistance Coordination-Group Workshop	05/08/2014	60
Arizona Commission of Indian Affairs	08/14/2014	18
AZ/NM Tribal Telecom	09/29/2014	16
Indian Country Intelligence Network	10/07/2014	25
National Tribal Telecom Association	11/14/2014	10
Ft Mojave Indian Tribal Council	03/03/2015	14
Tribal Emergency Preparedness Working Group	03/18/2015	11
Total		176

⁷ Information on stakeholder attendance at certain meetings prior to award of the SLIGP grant is not available.

Interoperable Communications Meetings

We have met with groups whose main purpose is to address interoperability issues with public safety communications. These groups are experienced in integrating new technology into their policies and procedures and will be instrumental in the success of the FirstNet rollout.

Table 13: Public Safety Association Meetings

Meeting	Date	Attendees
Coconino County Interoperable Communications Meeting	01/28/2014	29
Yavapai County Interoperable Communications Meeting	01/29/2014	15
Apache County Interoperable Communications Meeting	02/03/2014	19
Navajo County Interoperable Communications Meeting	02/04/2014	14
Gila County Interoperable Communications Meeting	02/04/2014	21
Graham/Greenlee County Interoperable Communications Meeting	02/05/2014	10
Cochise County Interoperable Communications Meeting	02/12/2014	8
Santa Cruz County Interoperable Communications Meeting	02/13/2014	11
Gila County Interoperable Communications Meeting—Round 2	04/02/2014	14
Navajo County Interoperable Communications Meeting—Round 2	04/03/2014	7
Apache County Interoperable Communications Meeting—Round 2	04/03/2014	8
Coconino County Interoperable Communications Meeting—Round	05/07/2014	12
Total		168

Non-Public Safety Stakeholder Meetings

We have been invited by several agencies and groups to present our FirstNet information at their regular meetings. The message, content and handouts are tailored to the audience and their specific function.

Table 14: Non-Public Safety Stakeholder Meetings

Meeting	Date	Attendees
Electric Power Research Institute	03/05/2014	20
Arizona Department of Transportation Meeting	11/10/2014	4
Above Ground Level Conference	12/04/2014	100
AZ Telemedicine Program	01/14/2015	15
Total		139

City and County Officials Engagement

In 2014, Arizona initiated a focused education and outreach effort targeted to elected officials, city managers and city planners. We enlisted the services of an Arizona-based public affairs firm with well-established contacts among local and elected officials throughout the state. The purpose of this effort is to educate these decision-makers and to seek a better understanding of their concerns as it relates to FirstNet planning, the Governor's opt-in/opt-out decision, and the eventual adoption of FirstNet by their agencies. We schedule these meetings in conjunction with trips for public safety audiences where possible. Generally, the questions from these meeting participants tend to focus on the business, budget and planning aspects of the FirstNet program, rather than the operational or solutions aspect. For example, during these meetings, we

typically are asked questions about how much will the service cost, when will the service be available, and will agencies be required to participate.

Table 15: Engagements with City and County Officials

Meeting	Date	Attendees
Western Arizona Council of Governments	03/06/2014	40
League of Cities & Towns	08/21/2014	12
County Managers Association	11/14/2014	18
Arizona CIOs	11/19/2014	18
Prescott Valley City Council	02/19/2015	20
Yuma County Board of Supervisors	03/02/2015	26
Yuma City Council	03/04/2015	41
Douglas City Administration	03/24/2015	1
Cochise County Board of Supervisors	03/24/2015	10
AZ Fire Chief's Leadership Conference & Expo	03/25-26/15	58
Coconino County Board of Supervisors	04/14/2015	21
Tri-City Council (Kingman, Bullhead City & Lake Havasu City)	04/22/2015	34
Total		299

National Conferences

The Arizona FirstNet team has had opportunities to share information about FirstNet at a national level, speaking on Arizona education and outreach efforts, as well as act as subject matter experts on technical aspects of the network, including local control of the network. National events that the Arizona FirstNet team participated in discussion panels can be found in *Table 16: Arizona FirstNet Presentations at National Conferences*.

Table 16: Arizona FirstNet Presentations at National Conferences

Meeting	Date
International Wireless Communications Expo (IWCE)—Las Vegas	March 2013
APCO International—Anaheim	August 2013
National Tribal Telecomm Association	August 2013
California First Responder Network (CalFRN)	February 2014
International Wireless Communications Expo (IWCE)—Las Vegas	March 2014
Southwest Border Communications Workgroup	May 2014
APCO International—New Orleans	August 2014
Southwest Border Communications Workgroup	September 2014
International Wireless Communications Expo (IWCE)—Las Vegas	March 2015

Electronic Outreach

In order to update stakeholders across Arizona on the many aspects and changes occurring within the FirstNet program, several forms of electronic outreach have been implemented. These efforts include our website, e-mail distribution list, and social media accounts.

Website

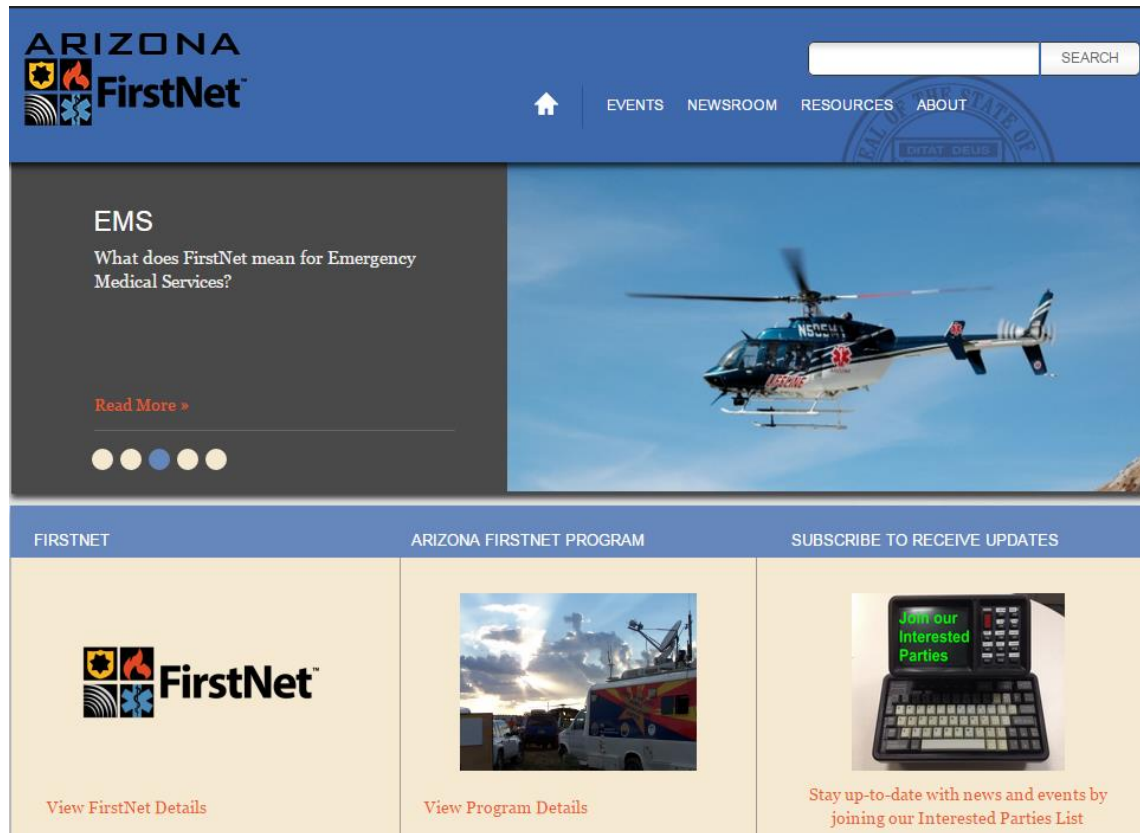


Figure 9: Arizona FirstNet Website: azfirstnet.az.gov

The Arizona FirstNet program has established a website at <http://azfirstnet.az.gov> to efficiently communicate our goals and activities and educate our stakeholders. Since launching the website on May 14, 2014, over 2,000 visitors have used this resource. The key elements of our website are Events, Newsroom, Resources and About.

- Events—Contains a calendar of our public meetings with the ability to register for meetings
- Newsroom—Current news articles and blog posts from FirstNet, federal agencies and media outlets
- Resources—Contains acronyms, handouts, links, FAQs, and presentations
- About—Describes the AZPSBN Workgroup, FirstNet, Arizona FirstNet, SLIGP and Staff

We also have sections for the national FirstNet program and the Arizona FirstNet program. The website is updated weekly.

eNewsletter

The screenshot shows the Arizona FirstNet website. At the top is a blue header with the Arizona FirstNet logo, a home icon, and navigation links for EVENTS, NEWSROOM, RESOURCES, and ABOUT. A search bar is on the right. Below the header, a banner reads "Home » Fill Out The Form Below To Receive Updates on News & Events". The main content area is divided into two columns. The left column has a section titled "Fill Out The Form Below To Receive Updates on News & Events" with a "Join our mailing list" button. Below this are input fields for "First Name:" and "Last Name:". The right column is titled "UPCOMING EVENTS" and lists two events: "04/22/2015 - 1:00pm to 3:00pm Arizona FirstNet Meeting: Lake Havasu City" and "04/23/2015 - 10:00am to 12:00pm Arizona FirstNet Meeting: Quartzsite". Below the events is a "SUBSCRIBE TO RECEIVE UPDATES" button.

Our email list of 1,656 provides the main distribution for our eNewsletter where we promote our upcoming meetings and our website. In addition, we use the eNewsletter to keep our stakeholders aware of key milestones in the FirstNet program, upcoming meetings, and major updates on the overall program. On average, we send communications one to two times per month. A full list of newsletter subjects is included in *Appendix F: eNewsletter History*.

Social Media Outreach

The Arizona FirstNet program established a LinkedIn group⁸ in July 2014 in order to foster conversations with our stakeholders on a variety of FirstNet and wireless broadband related topics. The LinkedIn group currently has 59 members responding to 33 conversations. Similarly, Arizona FirstNet is actively engaged on Twitter⁹, sending over 200 tweets to 298 followers.

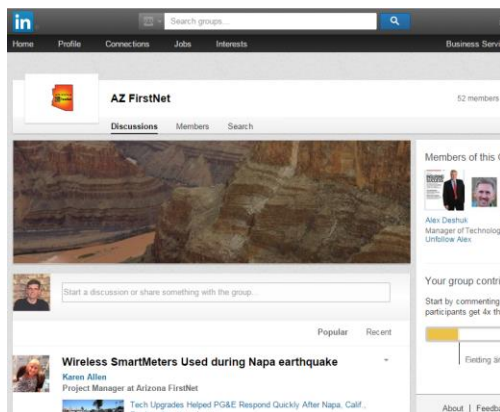


Figure 10: Arizona FirstNet LinkedIn Group



Figure 11: Arizona FirstNet Twitter Page

⁸ <https://www.linkedin.com/groups/AZ-FirstNet-6725665>

⁹ <https://twitter.com/AZFirstNet>

Key Findings & Outcomes

Throughout the course of our efforts, the Arizona FirstNet team has strived to understand the needs, desires, assumptions, constraints and expectations of Arizona's public safety and public service agencies. Our efforts to date have been limited to educating the public safety community on FirstNet and the NPSBN, as opposed to research and data collection efforts. However, there are certain anecdotal point of views, observations, and feedback we have received. This information is summarized below and reflected throughout this report, particularly in the Arizona Overview, Arizona Public Safety Highlights, and the Barriers to Participation and Adoption of FirstNet sections.

It is important to understand that there is no monolithic view commonly held by all of public safety, or even within sub-sets of the community. While we present the below information, some responses may seem counter-intuitive, or contradictory, compared to other responses. As we have conducted our outreach, it is not unusual to get widely different feedback within the same jurisdiction or discipline. This holds whether we are asking about perceptions of needs and quality of existing services; or asking about who they identify as potential public safety users. To a certain degree, each agency's mission and area of responsibility colors their perceptions.

Key User Requirements

Cost

The potential cost of the service and devices is the overriding concern expressed by almost all stakeholders, regardless of whether they are from urban or rural jurisdiction, small or large agencies, or even whether the stakeholder is a first-responder, technician, or decision maker.

- The majority of stakeholders have identified cost as the deciding factor if they will participate on the FirstNet network.
- Some stakeholders have said they *might* be willing to pay more for improved service, but cost is so overriding of a concern that that sentiment is rare.
- There is a need for more details about costs, budget and schedule for deployment. Many stakeholders have expressed a need for advanced notice of these items to appropriately prepare for budgeting.
- Users have expressed concern over whether they will need to replace their existing technology to be compatible with FirstNet. We are commonly asked "Will there be grants to buy new equipment?"
- One elected official expressed reservations that the project would fail for lack of adoption, and then agencies would be forced to subscribe to keep the project alive.
- Concern with the long term sustainability of the network and how agencies might be impacted in the future.
- Stakeholders have expressed a concern that the funding model needs to be developed with mechanisms to ensure user fees can only go to support the network and cannot be "swept" at the local, state or federal level. A common sentiment is "take all of the politics out of it."

Coverage and Capacity

Secondary to cost, stakeholders have provided feedback on Coverage and Capacity.

- Like most western States, Arizona has an abundance of wide open spaces. Public safety users, even within urban jurisdictions, have shared with us a concern about the lack of existing coverage—both voice and data. This concern is particularly acute in more remote areas of the State.
- There are plenty of areas around the state with exceptional coverage—and there are plenty of areas with no or extremely limited coverage.
- Commercial carriers have not been able to overcome coverage challenges posed by Arizona’s terrain.
- Some agencies report good commercial wireless voice and data coverage until they hit tribal land.
- Agencies such as the Department of Public Safety and the Arizona Department of Transportation traverse the state and have identified that there are gaps in carrier coverage throughout.
- County agencies are responsible for a wide span of land that is sparsely and or not populated, but requires a public safety presence. The Sheriff’s deputies and other personnel currently deal with a lack of carrier and radio coverage in many of these areas. Example incidents, such as wildfires and mass casualty shootings were provided where the Sheriff’s office has coordinated with carriers to bring in Cellular on Wheels (COW) deployables to assist with coverage and capacity. Having another option for data coverage such as FirstNet will benefit agencies.
- While specific areas needing coverage differ by stakeholder, the common theme among stakeholders is “We need coverage in the areas we work. We also need it in areas we don’t normally work, but where we have to respond to an incident.”
- A common sentiment among stakeholders “It does not take much to overload a commercial network when a public safety incident occurs.”
- Some stakeholders expressed concern that coverage data provided by commercial carriers overstates the level of competition and the amount of infrastructure because, in many cases, services are offered by multiple resellers based on the limited infrastructure of a primary carrier.

Other Questions and Concerns Raised by Stakeholders

- How will the service be provisioned?
- What will the service contract look like?
- Will existing devices be compatible with FirstNet?
- Will device technology evolve with network and vice versa?
- What will happen if the commercial carriers put in place a prioritized and preempted network that competes with FirstNet and no one joins FirstNet?

- Potential for the network to lead to Information Overload. Users from multiple disciplines have expressed a need for appropriate training and procedures to accommodate the new technology.
- Need to understand how technology will be used by responders so telecommunications and other support personnel can tailor their support appropriately.
- Post-Traumatic Stress due to additional information such as video streams of high carnage incidents.

Awareness/Comprehension

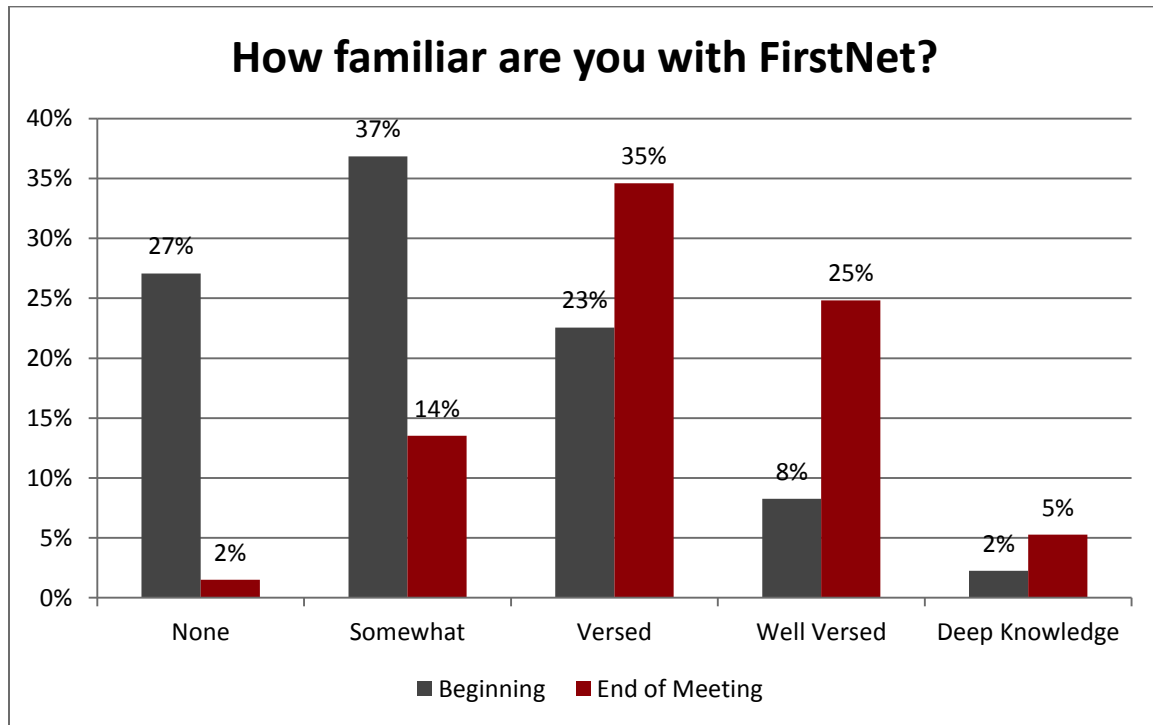


Figure 12: FirstNet Familiarity

Perceptions and Views about FirstNet in General

- Wariness of a federal program. This concern is particularly raised by Elected Officials.
- Skepticism about whether it will be built, and if it is possible for such an effort to succeed.
- Wait and see if it comes to fruition.
- If the promises are delivered on, this will be great.
- Places lacking in data coverage see this as promising.
- Areas with good existing coverage have a “why do we need it?” perspective.
- Will the use of FirstNet be mandatory?
- Customer Service: Current carriers provide excellent customer service, will FirstNet be as responsive?

Interest/Adoption Propensity

Public safety agencies provided a mix of responses when asked about their interest in FirstNet. As seen in *Figure 13: Level of Interest in FirstNet*, over 79% of attendees at our education and outreach events express some level of interest in FirstNet and a nationwide wireless data network. Attendees from Arizona agencies with little to no broadband coverage valued FirstNet building a network that would resolve this critical issue. The majority of agencies identified cost as the deciding factor as to if they would be a participant on the FirstNet network. Agencies repeatedly answered that if FirstNet cost more than they are currently paying than they would probably not switch from their current carrier to FirstNet. It was also mentioned that tribal lands would benefit by the addition of infrastructure and coverage where it does not currently exist. Overall, it was hard for any one agency to say for certain what their adoption rates would be with no confirmed FirstNet implementation, cost or coverage plans in place.

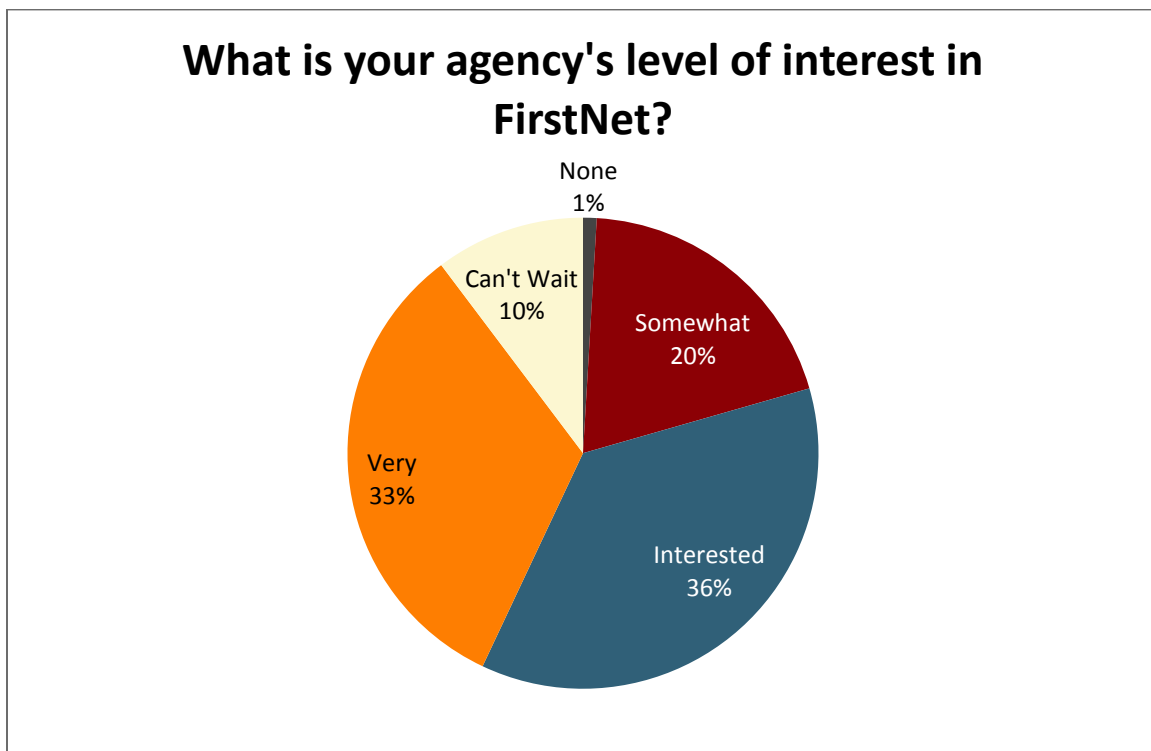


Figure 13: Level of Interest in FirstNet

Existing Data and Technology Use

Based on preliminary survey results from 171 agencies who have attended at least one outreach event, the majority of Arizona's 500 public safety agencies routinely utilize smartphones, tablets and Mobile Data Computers (MDC) or Mobile Data Terminals (MDT). As seen in *Figure 14: Data Devices used by Public Safety*, the most common data device in use is a data enabled phone. Arizona FirstNet recently began surveying our stakeholders about their current usage of mobile data services. We asked users to select all of the reasons why they were not currently using commercial data services. As seen in *Figure 15: Reasons for Not Utilizing Data Services*, cost is the primary concern given by 53% of respondents and coverage being given by 35% of

respondents. For stakeholders who are currently using commercial data services, we asked them to identify all of the challenges or issues they are experiencing with their current service. As seen in *Figure 16: Issues or Challenges with Mobile Data Services*, coverage is the overwhelming concern, with 76% of respondents expressing concerns with their current level of coverage. However, even for agencies that have made the decision to use commercial services, cost remains a significant concern of 54% of respondents.

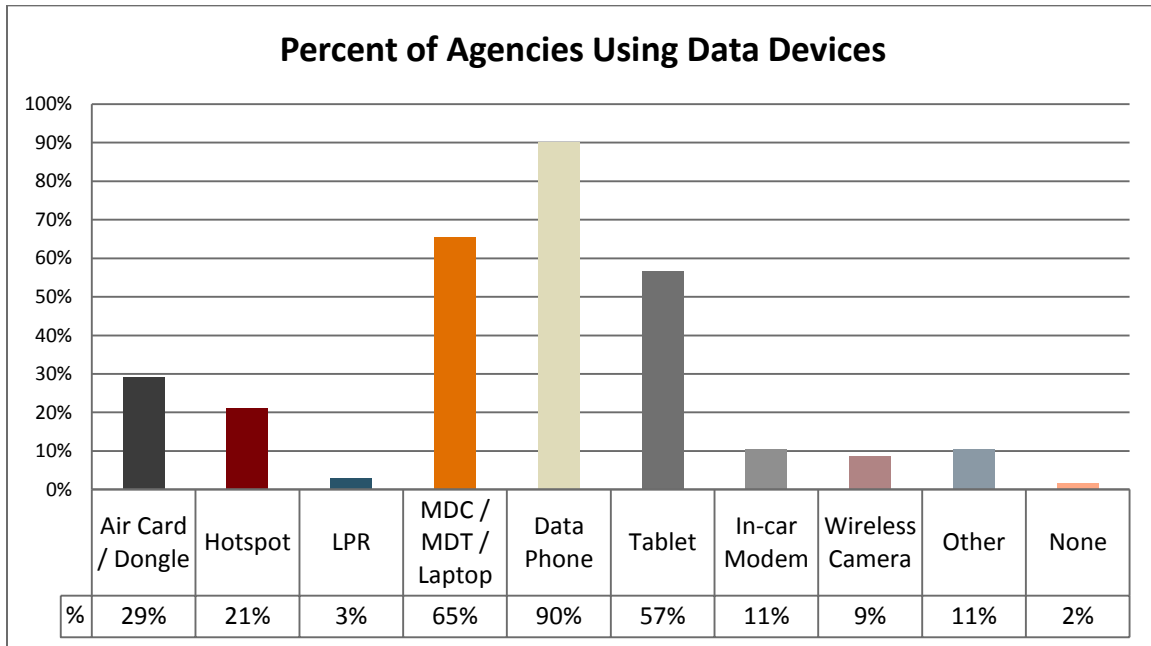


Figure 14: Data Devices used by Public Safety

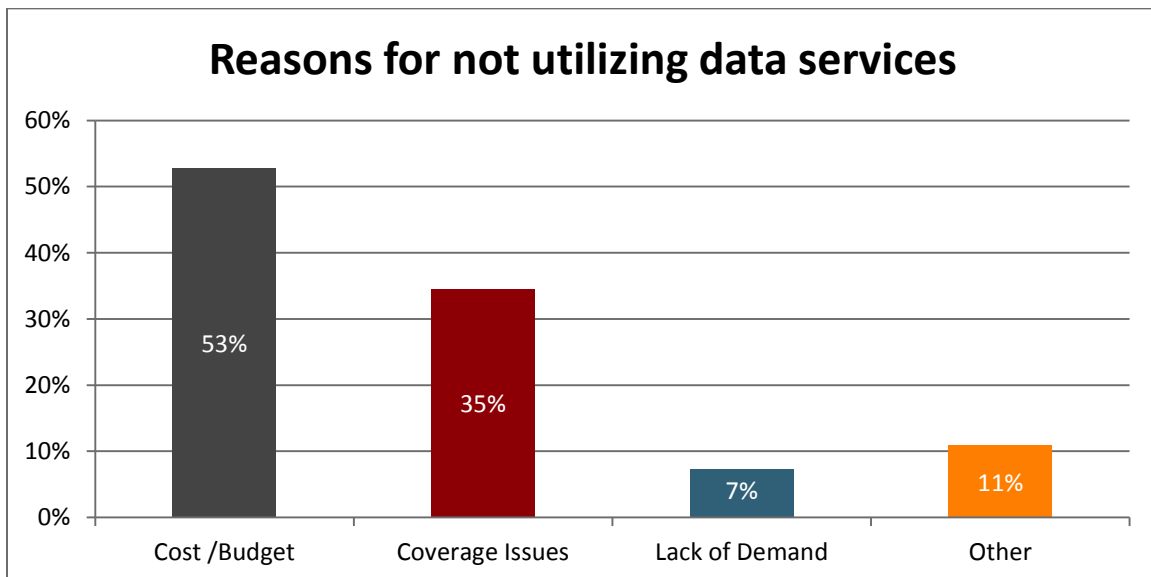


Figure 15: Reasons for Not Utilizing Data Services

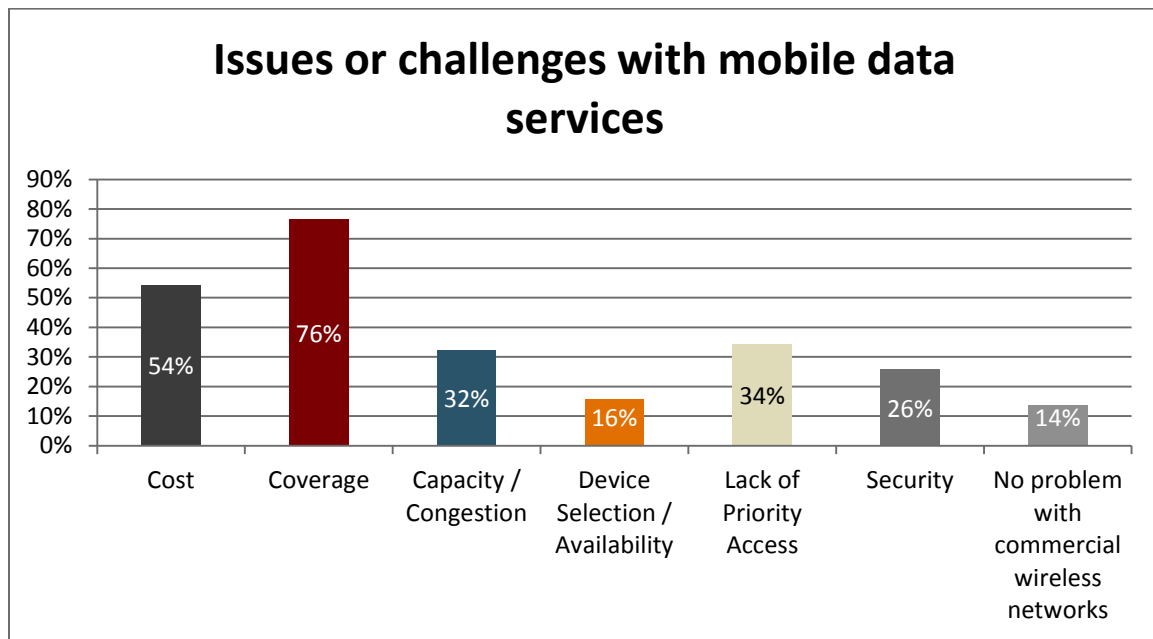


Figure 16: Issues or Challenges with Mobile Data Services

- Wireless data is in use by agencies of all sizes and disciplines, in rural and urban settings.
- Agencies are moving more towards adopting technology such as MDCs and tablets. Current use may not reflect the growth in adoption.
- Many agencies are already using wireless data, applications, and real-time data services. See *Appendix I: Applications Used by Arizona Public Safety*.
- Municipalities are beginning to use apps to interface with citizens as well, such as reporting of non-emergency problems and mass notification services.
- Fire agencies are utilizing data devices such as smartphones for remote dispatch. These devices provide the ability to receive dispatches, track status, view maps of all units on calls and to listen to and replay the original dispatch of the call.
- The ADOT Enforcement Unit staffs 15 ports of entry stations around the state and currently uses a variety of wireless devices in their daily activities.
- DPS is also using wireless devices around the state and in many locations has challenges with radio interoperability with their counterparts.

Public Safety User Definitions

Arizona public safety users rely on a variety of other entities to accomplish their day to day missions. Fire departments rely on utility companies to manage power, gas and water during a fire; emergency room hospital personnel provide direction when treating medical patients and private ambulances are utilized for air and ground transportation. Fire service is provided by private fire companies in unincorporated areas throughout Arizona. Law Enforcement and Fire rely on municipal, county and state public works, transportation and solid waste departments to assist during weather related incidents, such as flooding, storms and fires, as well as day to day incidents.

Public safety agencies along the border interact with U.S. Customs and Border Patrol (CBP) agents to manage border events. Tribal entities all the way up to the Grand Canyon work in partnership with the CBP dealing with criminal activity. Law enforcement agencies rely on federal partnerships and task forces to accomplish many missions around the state with agencies such as the Marshall's Service, Federal Bureau of Investigation (FBI) and Drug Enforcement Agency (DEA). Military public safety agencies also work closely with their local counterparts in firefighting and criminal investigations.

Search and Rescue units are attached to every Sheriff's office around the state. These groups are integral in supplementing public safety when doing rescues. Many times these teams are sent to remote areas where there is no radio or cellular communications.

Non-Traditional Public Safety Stakeholders

Hospitals, utility companies, public works and other stakeholders have been identified as organizations that work closely with traditional public safety during incidents and events. These organizations have shared that they use wireless devices to coordinate with public safety in support of their missions. Hospital personnel see this as an avenue to receive real time data, such as videos, photos from on scene personnel and enhance wireless communications that are already occurring. Utility companies are using wireless devices and have indicated some of their devices and data is proprietary, which will need to be a consideration for FirstNet.

Initial Consultation Meeting

Goal

Position Arizona to appropriately influence the State Plan for Arizona and ensure our unique public safety and public service requirements are met.

FirstNet Purpose

As stated in the Single Point of Contact Initial Consultation Package:

The purpose of this initial consultation is to understand the unique needs of your state, share information about FirstNet and the overall consultation process, and to begin a dialogue on how to collaborate with your state as FirstNet works toward the development of your state plan.

Expected Outcomes

The following are Arizona's expected outcomes for our initial consultation with FirstNet:

- Establish baseline expectations for the State Consultation Process.
- Facilitate informed decision making among key stakeholders who will have an influence on the Governor's decision on whether or not to accept the State Plan from FirstNet.
- Communicate to FirstNet Arizona's key priorities for the Nationwide Public Safety Wireless Broadband Network and the challenges Arizona perceives with the development and adoption of FirstNet.
- Demonstrate that the Arizona FirstNet program is prepared and well equipped to negotiate with FirstNet on behalf of Arizona stakeholders for the development of the State Plan.

Proposed Agenda

The following agenda items are an initial draft that will be refined through discussions with FirstNet and additional feedback from our stakeholders:

- Welcoming Remarks/Introductions
- FirstNet Update & Consultation Process
- State Update
- Use Case #1
- Use Case #2
- Working/Networking Lunch—Use Case #3 (potential video)
- Panel Discussion—Use Case #4
- User Discussion
- Coverage Discussion
- General Question and Answer Period
- Wrap-up and Next Steps
- Consultation Meeting Adjournment

Proposed Locations

The Arizona FirstNet team has identified several locations that will be suitable for hosting the Initial Consultation with FirstNet. The final location will be determined through conversations with FirstNet staff and dependent on a mutually agreed upon date. All locations offer the necessary meeting space and logistical support to host the consultation.

- Arizona Division of Emergency Management Allen Readiness Center
5636 East McDowell Road, Phoenix, AZ 85008
- Phoenix Fire Training Academy
2425 West Lower Buckeye Road, Phoenix, AZ 85009
- Glendale Regional Public Safety Training Center
11550 West Glendale Avenue, Glendale, AZ 85307
- SkySong—Arizona State University Scottsdale Innovation Center
1475 North Scottsdale Road, Scottsdale, AZ 85257
- Maricopa County Sheriff's Office Training Facility
2627 South 35th Avenue, Phoenix, AZ 85009

Proposed Dates

Arizona FirstNet is available during the proposed dates below for a day-long initial consultation meeting with FirstNet. The final consultation date will be determined through conversations with FirstNet staff.

- Tuesday, August 25, 2015
- Thursday, August 27, 2015
- Wednesday, September 9, 2015
- Thursday, September 10, 2015

Attendee List

Arizona anticipates approximately 120 participants in the Initial Consultation with FirstNet. Approximately 165 Executive Staff, Program Staff, and Stakeholders will be invited.

Executive Staff

The following officials will be invited to the initial consultation meeting. These key officials, or their representatives, are expected to attend the initial meeting.

Table 17: Executive Staff

Name	Title	Agency
Douglas A. Ducey	Governor	State of Arizona
Gilbert M. Orrantia	Director	Department of Homeland Security
Frank Milstead	Director	Department of Public Safety
Kevin Donnellan	Acting Director	Department of Administration
Wendy Smith-Reeves	Director	Arizona Division of Emergency Management
John S. Halikowski	Director	Department of Transportation
Charles L. Ryan	Director	Department of Corrections
Alberto Gutier	Director	Governor's Office of Highway Safety
Kirk Adams	Chief of Staff	Office of the Governor
Joe Cuffari	Public Safety Policy Advisor	Office of the Governor
Rene Guillen	Government and Transportation Policy Advisor	Office of the Governor
Kristine Fire Thunder	Native American Affairs Policy Advisor	Office of the Governor, and Arizona Commission on Arizona Indian Affairs
Mike Lettman	Acting State CIO	Department of Administration
Gary Hensley	Assistant Director & Chief Enterprise Integration Officer	Department of Administration
Susan Dzbanko	Assistant Director	Department of Homeland Security
Jeff Raynor	Assistant Director	Department of Public Safety

Program Staff

The following Arizona FirstNet and BPPSC staff members are required at the initial consultation meeting. These staff will be in attendance at the initial meeting.

Table 18: Program Staff

Name	Title	Agency
Michael Sherman	Executive Manager, BPPSC	Arizona Department of Administration
Michael Britt	FirstNet Program Manager	Arizona Department of Administration
Justin Turner	Senior Program Advisor	Arizona Department of Administration
Karen Allen	Project Manager	Arizona Department of Administration
Greg Sundie	Project Manager	Arizona Department of Administration
Alan Holcomb	Project Manager	Arizona Department of Administration
Mike Golden	GIS Subject Matter Expert & Planning Analyst	Arizona Department of Administration

Key Stakeholders

The following stakeholders are critical to the success of the State Consultation process. These stakeholders represent members of the SIEC, AZPSBN workgroup, and representatives of key State agencies. These key stakeholders are expected to attend the initial meeting.

Table 19: Required Stakeholders

Name	Title	Agency
Cathy Allen	Commander	Coconino County Sheriff's Office
Julie Augeri	Emergency Preparedness Administrative Coordinator	Arizona Department of Corrections
Edwin Barlow	Battalion Chief	Colorado City Fire Department
Roger Baune	Manager, Technical Services, ISO	Arizona Department of Public Safety
Harry Beck	Fire Chief	Mesa Fire & Medical Department
Christina Bermudez	Communications Supervisor	Nogales Police Department
Les Caid	Fire Chief	Rio Rico Fire District
Kimberly Campbell	Emergency Planner	Arizona Department of Transportation
Steven Campbell	Chief of Police	City of El Mirage
Carol Capas	Communications Program Coordinator	Cochise County Sheriff's Office
Eddie Carrera	Assistant IT Director—YRCS	City of Yuma
Chris Chambers	Fire Chief	Buckskin Fire Department
Robert Rowley	Emergency Manager	Coconino County Emergency Management
Dave Collett	Lead Radio Systems Engineer	City of Peoria
Jesse Cooper	Acting Bureau Administrator/IT Project Manager	Phoenix Police Department, Communications Bureau
Alex Deshuk	Manager of Technology and Innovation	City of Mesa
Brian Douglas	Deputy Director	Graham County Emergency Management
Don Engler	Chief of Police	Payson Police Department
David Felix	Executive Director	Regional Wireless Cooperative
Dean Funk	Supervisor, Radio Division	Marine Corps Air Station S-6 Yuma
Mike Garcia	Deputy Chief	Tucson Fire Department
Art Goldberg	Telecommunications Manager	Bureau of Land Management
Richard Guinn	Emergency Services Coordinator	Apache County Sheriff's Office
Joe Gulotta	Assistant Chief	City of Tucson Fire Department
Patrick Hancock	Fire Chief	Snowflake Fire Department
John Hannon	Fire Chief	Rural Metro Fire Department
Cori Hayes	Assistant Fire Chief	Mesa Fire & Medical Department

Name	Title	Agency
Robert Hollister	Deputy Chairperson	Cochise County Local Emergency Planning Committee
Mark Howard	Executive Director	Arizona State Emergency Response Commission, Arizona Division of Emergency Management
James Hughes	Commander	Maricopa Police Department
Brian Hunt	Captain	Yavapai County Sheriff's Office
Barbara Jaeger	State 9-1-1 Administrator	Arizona Department of Administration
Luke Johnson	Director	Fort Mojave Indian Tribe Department of Emergency Response
Steven Johnson	Sergeant	Marana Police Department
Jeremy Knoll	Statewide Interoperability Coordinator	Arizona Department of Public Safety
Richard Langevin	Planner	Maricopa County Emergency Management
Kyle Lehmkuhl	Assistant Chief Ranger	National Park Service
Malcolm Lewis	Director	Tohono O'odham Nation Department of Public Safety
Claudia Leyva	Lieutenant	Yuma Police Department
Jeff Lineberry	Deputy IT Director	Navajo County
John Lucas	Information Technology Director/CIO	Graham County
Dan Martin	Infrastructure Manager	Pinal County IT
Christine Medley	Bio Defense Specialist	Fort Mojave Indian Tribe Office of Emergency Response
Hank Metzger	Assistant Emergency Response Coordinator	Graham County Health Department
Terry Mullins	Bureau Chief	Arizona Department of Health Services Bureau of EMS and Trauma System
Doug Mummert	Chief	Phoenix Fire Department
Andy Murray	ITS Communications Engineer	Arizona Department of Transportation
Steven Nelson	Captain	Navajo Police Department
Mary Newton	Communications Supervisor	Camp Verde Marshal's Office
Mike Nuttall	Chief of Police	Springerville Police Department
Susan Otero	Deputy Chief of Police	Yuma Police Department
Ron Parks	Police Radio Communications Analyst	Chandler Police Department
Heather Pyeatt-Morris	Yuma County 9-1-1 Coordinator/9-1-1 Dispatch Supervisor	City of Yuma Public Safety
Fernando Reyes	Border and Tribal Liaison	Arizona Department of Homeland Security
Kevin Rogers	Manager	Department of Public Safety, Wireless Systems Bureau

Name	Title	Agency
Steve Rutherford	Emergency Management	Greenlee County
Mike Sacco	Captain	Pima County Sheriff's Department
Mark Schroeder	Communications and Infrastructure Manager	City of Phoenix Water Services Department
Dale Shaw	TRWC Executive Director	City of Mesa
Adam Shepherd	Sheriff	Gila County Sheriff's Office
Jerry Simpson	IT Manager	Phoenix Fire Technical Services
Richard Stoddard	Telecommunications Manager	FBI
Craig Sullivan	Executive Director	County Supervisors Association
Ron Taylor	Sr. Principal Engineer—Communications	Salt River Project
Shannon Tolle	IT Communications Director	City of Scottsdale
Eric True	Captain	Highlands Fire District
Jay Vargo	IT/Radio Program Director	Pinal County
Mark Venuti	Director	Guardian Medical Transport
David Verley	Technology Services Manager	Bullhead City Fire Department
John Voorhees	Executive Director	Pima County Wireless Integrated Network
Pete Weaver	Director	Maricopa County Department of Emergency Management
Jerome Wofford	Assistant Chief Patrol Agent	U.S. Customs and Border Patrol
Mike Worrell	Chief	Phoenix Fire Department
Jon Young	State Chief Ranger—Arizona	Bureau of Land Management

Desired Attendees

The following additional stakeholders are desired at the initial consultation meeting. They will be invited to the initial consultation and the Arizona FirstNet program shall ensure they have representation at the event.

- All 22 Federally Recognized Tribes
- National Tribal Telecom Association
- Inter-Tribal Council of Arizona (ITCA)
- Tribal Law Enforcement Consortium of Arizona (TLECA)
- Indian Country Intelligence Network (ICIN)
- ADOT Intelligent Transportation Systems
- Homeland Security Senior Advisory Council members
- AZDOHS Regional Advisory Council Committee Chairs
- AZDOHS Urban Area Security Initiative Co-chairs
- State Fire Marshall
- PSAP System Administrators
- Local contacts from the following federal agencies:
 - Bureau of Land Management (BLM)

- Department of Interior (DOI)
 - U.S. Customs and Border Patrol (CBP)
 - Bureau of Indian Affairs (BIA)
 - Federal Bureau of Investigation (FBI)
 - National Park Service (NPS)
 - United States Forest Service (USFS)
- Representative from the major public safety associations—Sheriff's, Fire Chiefs, Fire Districts, Police Chiefs, etc.
- Utility Companies: Arizona Public Service, Salt River Project, Tucson Electric & Power, Unisource, Western Area Power Authority, Central Arizona Project, Arizona Rural Electric Cooperatives.
- Arizona Commerce Authority

Arizona Overview

Geography

Arizona, located in the southwestern United States, is bordered to the east by New Mexico, to the north by Utah, to the north and west by Nevada, to the west by California, and to the south by Mexico (See *Figure 17: Arizona and Bordering States*). Additionally, the northeast corner of Arizona is part of the “Four Corners” region, along with Colorado, New Mexico and Utah.

Arizona measures approximately 400 miles in length, 310 miles in width, and has a total area of about 113,900 square miles, making it the sixth largest state in the United States. Arizona’s water area is roughly 364 square miles, making it one of the driest states in the nation. The Colorado River meets the water and power needs of nearly 30 million people within its basin states and adjoining areas, including Mexico. Arizona shares water resources in the Lower Basin with Nevada and California (See *Figure 18: Physiographic Provinces*).

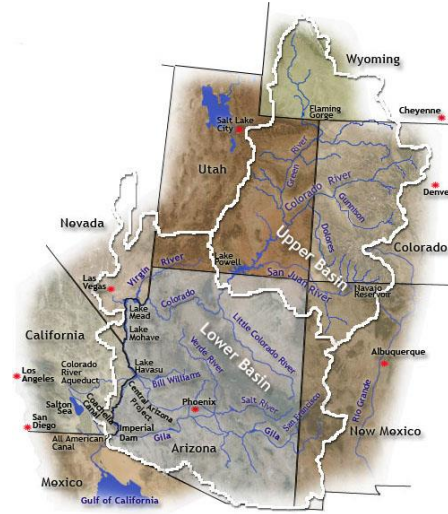


Figure 17: Arizona and Bordering States

Arizona is composed of three distinct physiographic provinces that impact the design and implementation of communications networks across the state. Each has its own special set of requirements for protection, equipment, weather conditions, and environmental concerns:



Figure 18: Physiographic Provinces of Arizona

1. The Colorado Plateau is an area of flat-topped mesas, buttes and deeply incised canyons, with elevations ranging from 5,000 to 7,000 feet. It covers much of the northeastern area of Arizona.
2. The Basin and Range Province has north-to-northwest-trending isolated mountain ranges rising abruptly from broad plain-like valleys or basins. Elevations range from near sea level in the desert areas to mountain ranges of 8,000 to 10,000 feet. This province covers most of the western and southern portions of Arizona.
3. The Transition Zone is a deeply dissected mountainous area between the two major provinces, characterized by small, isolated valleys or basins between the mountain blocks. This area is generally lower in elevation than the Plateau, with mountain ranges as high as the Plateau rim.

Climate

Arizona's climate can be unforgiving, with winter low temperatures in higher elevations reaching -35° Fahrenheit (F) and summer high temperatures reaching over 120°F. Daily high to low temperatures can swing as widely as 60°F. The geographic realities detailed above, coupled with these severe climate concerns, make Arizona's overall environment challenging and unforgiving to public safety operations and communications alike.

Population Density

Arizona's population is growing rapidly, and Phoenix is one of the fastest-growing cities in the United States. The 2010 Census estimates the statewide population of Arizona at 6.4 million citizens¹⁰. The Phoenix metropolitan area (Maricopa County) has a population of 3.8 million residents, and Pima County encompassing the Tucson metropolitan area has 1.0 million residents. These two counties represent 75 percent of Arizona's population. Of the remaining counties, 11 have a population density less than 100 people per square mile, and an additional two have less than five people per square mile (See *Figure 19: County Population Density*). Depending on the definitions for categories of population density adopted by FirstNet, up to 85 percent of Arizona could be classified as either "rural" or "frontier."

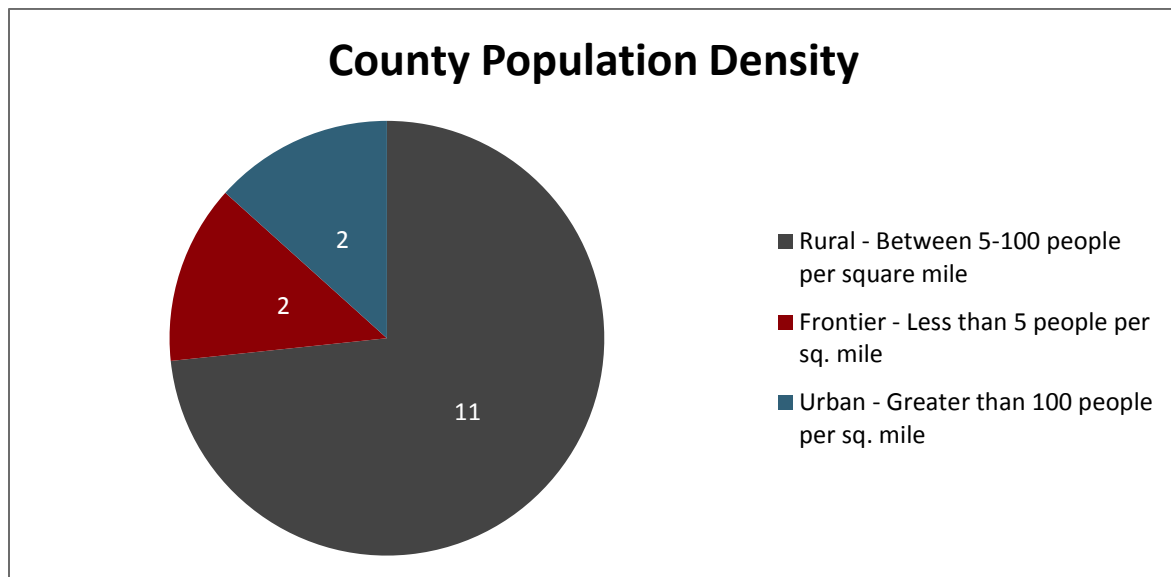


Figure 19: County Population Density

¹⁰ <http://census.gov/2010census/data/embedstate.html?state=AZ>

While a majority of Arizona’s populated areas can be most accurately described as “rural” or “frontier”, many of these counties and cities are home to specific events, attractions, and other factors that can contribute to high visitation rates requiring a significant public safety presence or response. While too numerous to list in this report, examples of these types of locations include:

- The Grand Canyon, while only having 2,500 year-round residents, receives 4.5M visitors annually.
- Many communities in Arizona double in population with temporary residents during the winter months.
- The major lakes in Arizona each receive millions of visitors per year requiring a significant public safety presence, even though they are sparsely populated with year-round residents.
- Towns that border California, Nevada, Utah, or New Mexico—such as Yuma, Bullhead City, Littlefield, or Springerville—serve as evacuation points for wildfires and floods which occur in these states, but impact Arizona operations.

Land Ownership

As seen in *Figure 20: Land Ownership in Arizona*, private land ownership is less than 20 percent of Arizona’s landmass. Arizona is home to 22 federally recognized Native American Tribes¹¹ that occupy a combined landmass of approximately 25 percent (21 million acres) of Arizona’s land. There is also a significant amount (more than 28 million acres) of federal land in Arizona, underlying the importance of including both federal and tribal participants in the interoperable communications solutions deployed in the state. Federal land in Arizona is managed in large part by the United States Bureau of Land Management (BLM), National Forest Service, National Park Service, or Department of Defense (DOD).

¹¹ http://azcia.gov/tribes_of_arizona.asp

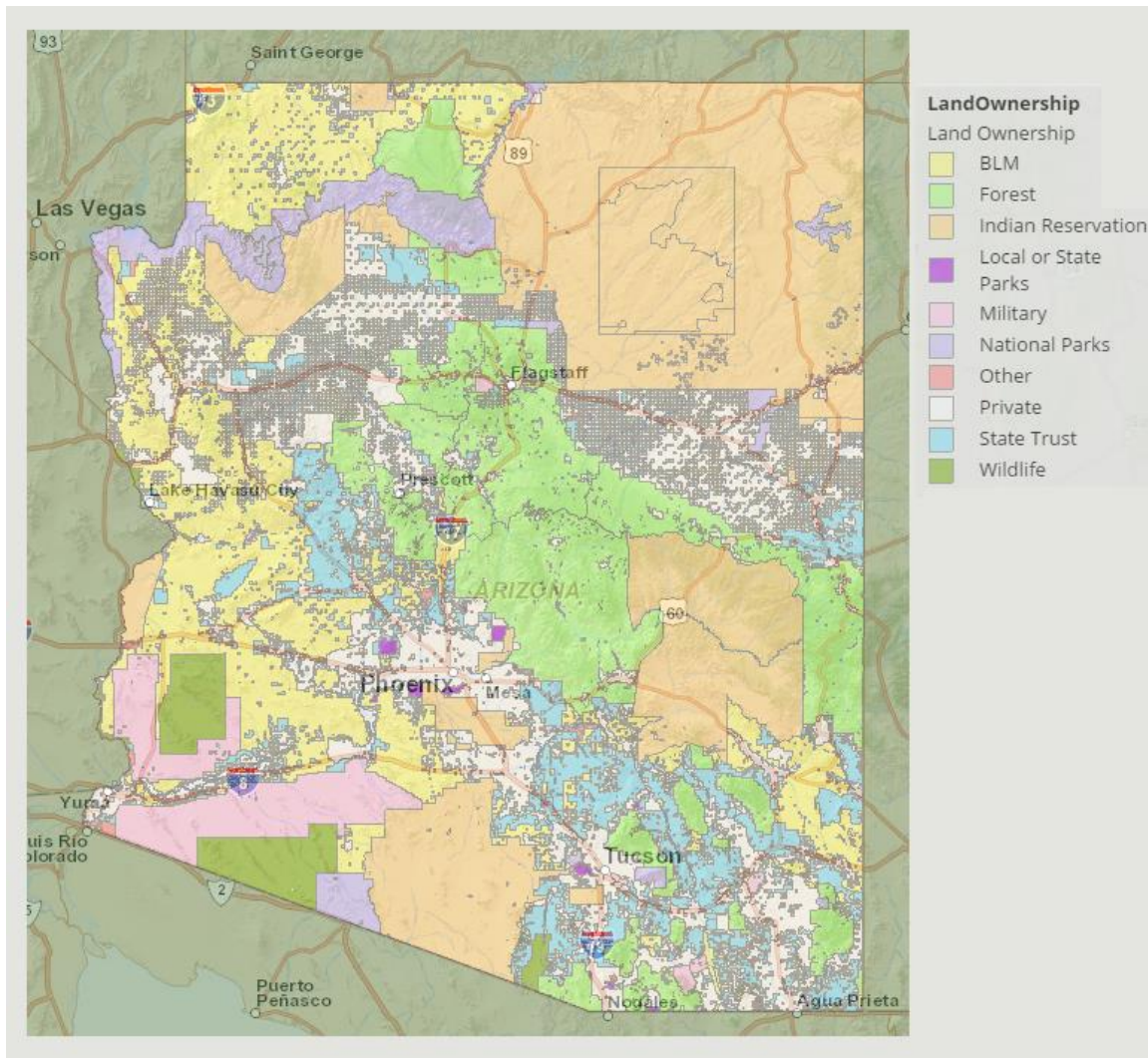


Figure 20: Land Ownership in Arizona

The general locations of the following key national military installations are shown in *Figure 21: Arizona Military Installations*:

1. Davis-Monthan Air Force Base in Tucson is home of the 355th Fighter Wing, whose primary mission is to train A-10 pilots and provide close support and forward air control to ground forces worldwide
2. Fort Huachuca, in Sierra Vista is home to the U.S. Army Intelligence Center and School
3. Luke Air Force Base in Glendale is home of the 56th Fighter Wing (the only F-16 Fighter pilot training facility)
4. Marine Corps Air Station (MCAS) Yuma, home of the Marine Aircraft Group 13.
5. Yuma Proving Ground covers almost 3,400 square km and spreads over two counties—Yuma and La Paz.

6. Barry M. Goldwater Air Force Range near Southwestern Arizona is a 2.7 million acre training facility and the nation's third largest tactical aviation range.
7. Camp Navajo near Flagstaff Arizona is an Army training facility and ammunition storage depot.

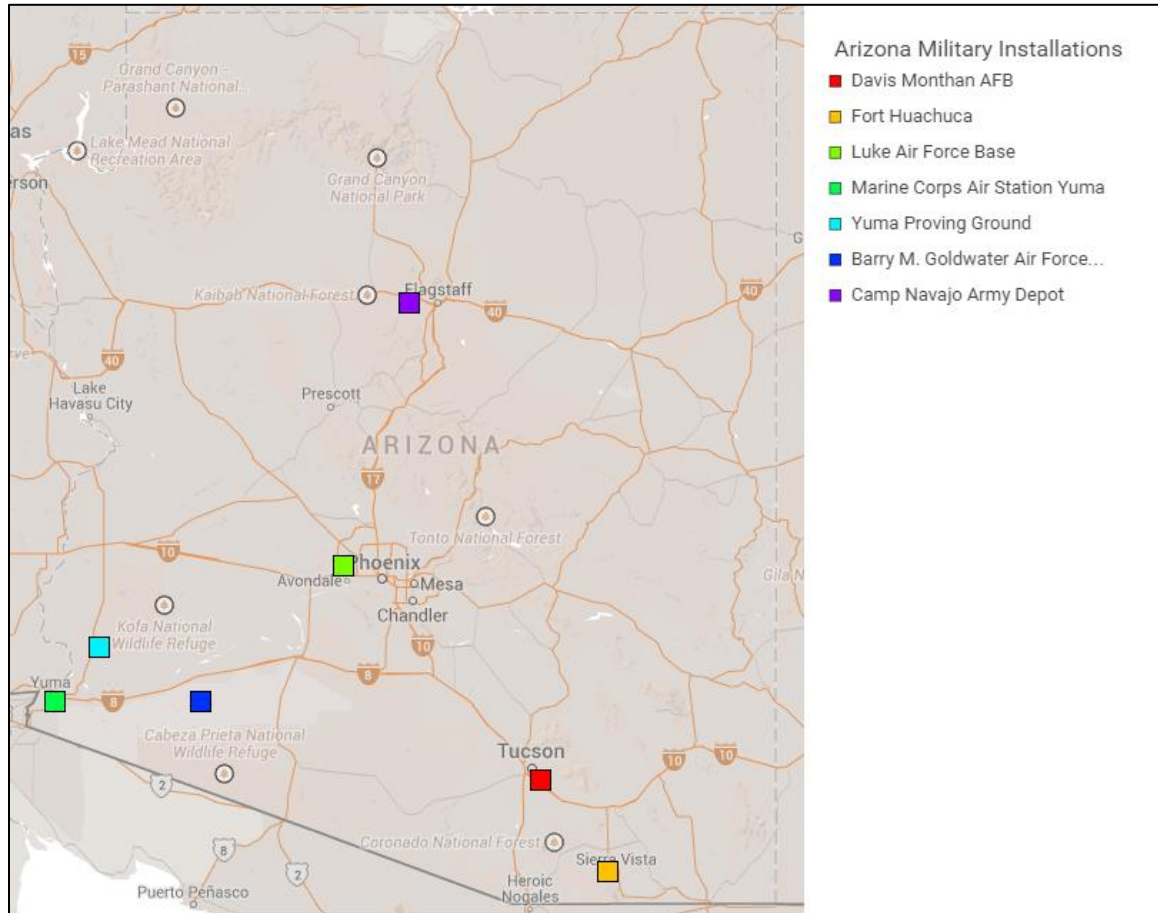


Figure 21: Arizona Military Installations

Critical Infrastructure

Arizona's critical infrastructure includes highways, bridges, international ports of entry, waterways, electric power plants (including nuclear facilities), airports, and telecommunications sites. Each of these are critical to supporting Arizona's standard of living and primary sources of income, which include tourism, high-tech industries, defense industries, a rising number of retirement communities, and the banking/finance sector.

Arizona has over 400 dams. Two federally-operated dams, Hoover Dam and Glen Canyon Dam, are particularly noteworthy because each impacts the water supply and hydroelectric production of multi-state areas. Major reservoir storage systems are located on the Colorado, Salt, Verde, Gila, and Agua Fria Rivers. The Central Arizona Project is a 336-mile-long system of aqueducts, tunnels, pumping plants and pipelines, and is the largest single source of renewable water supply in Arizona.

Arizona is also home to the largest nuclear power generation facility in the United States. The Palo Verde Nuclear Generating Station located about 55 miles west of central Phoenix has three units capable of generating nearly 4,000 megawatts of electricity.

Roadways

Arizona has over 1,100 miles on five interstate freeways (I-8, I-10, I-15, I-17, I-40), and over 2,800 miles of other principal freeways and arterial roadways. (See *Figure 22: Functional Classification of Arizona Roadways*) While significant, this is less than 20 percent of the 15,263 total miles of federal and state highways in Arizona. (See *Figure 23: Length of Roads by Type*)

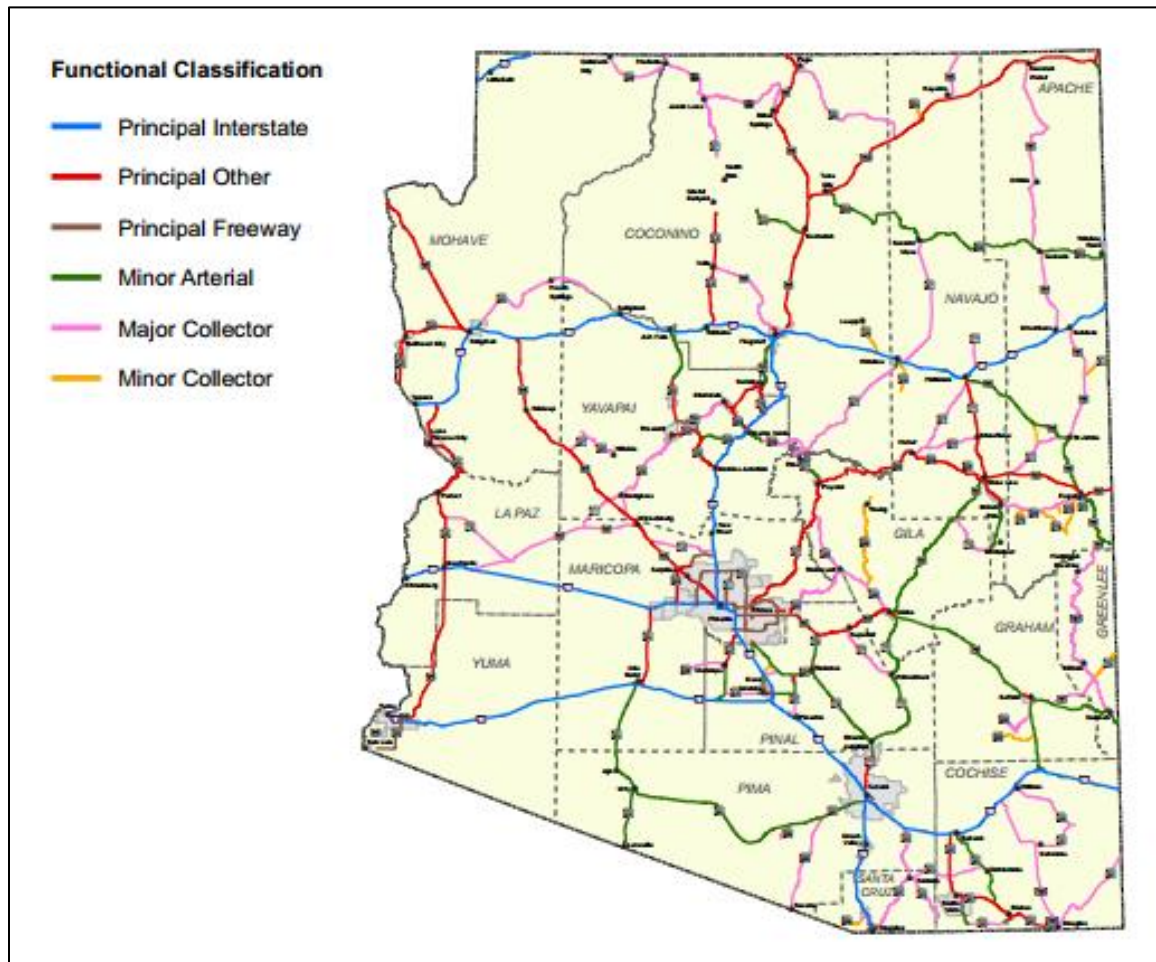


Figure 22: Functional Classification of Arizona Roadways

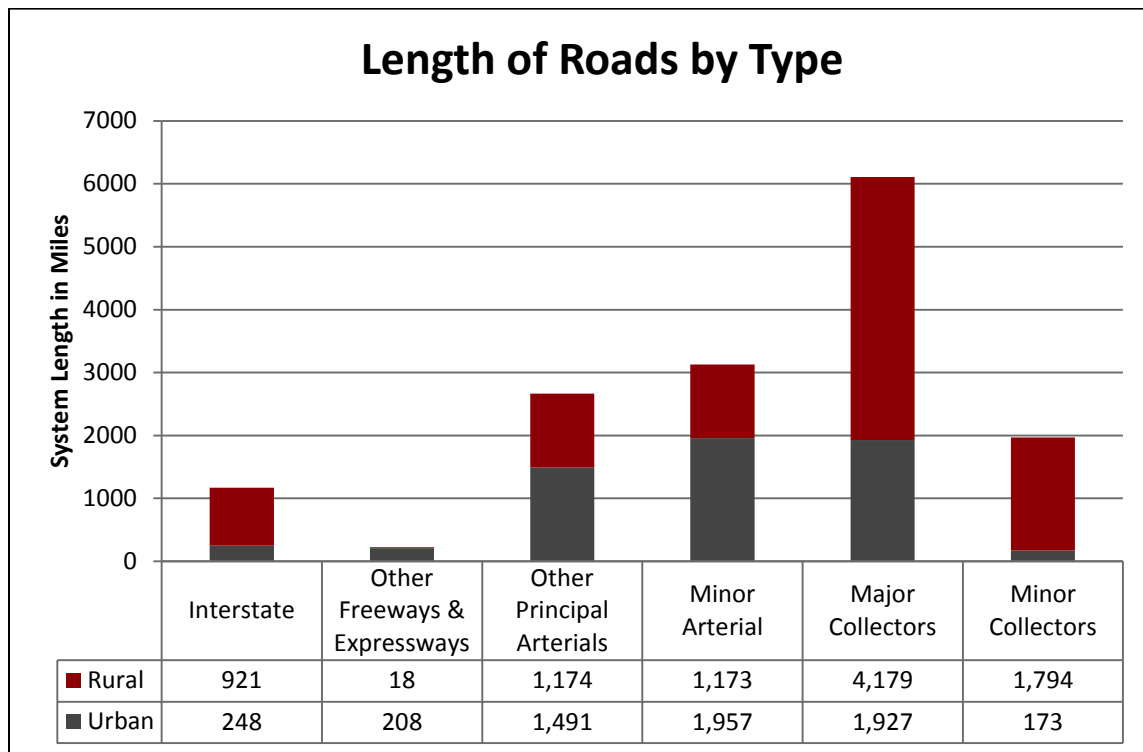


Figure 23: Length of Roads by Type

Known Natural Disaster Hazards

Based on data compiled from county Emergency Operations Center (EOC) surveys since 2002, wildland and other types of fires comprise a significant proportion of Arizona disasters. Arizona also experiences impactful slow-rising and flash flooding caused by monsoons and microbursts. *Figure 24: Flooding Potential and Relative Fire Risk* highlights the areas in Arizona that are particularly susceptible to flooding and wildfires.¹² Although portions of the state lie in proximity to known fault lines, no earthquake in recorded history has caused deaths or injuries in Arizona. Since 1953, Arizona has experienced 58 federally declared disasters, of which 32 were fires and 13 were floods (See *Figure 25: Federally Declared Disasters Since 1953*).

¹² <http://data.azgs.az.gov/hazard-viewer/>



International Border with Mexico

Arizona shares its 389-mile-long southern border with Mexico. This international border includes six international crossing stations located at Nogales-Mariposa, Douglas, Lukeville, Naco, Sasabe and San Luis. Nogales-Mariposa alone sees almost \$19 billion in trade annually, representing 89 percent of all surface mode trade between Arizona and Mexico.

Four of Arizona's counties (i.e., Yuma, Pima, Santa Cruz, and Cochise) share a border with the Mexican State of Sonora. Local and state responders in these counties interoperate with United States federal responders from agencies such as the U.S. Customs and Border Protection, Immigration and Customs Enforcement, Bureau of Alcohol, Tobacco, Firearms, and Explosives, and the Federal Bureau of Investigation, as well as with public safety officials in Mexico. Many of the agencies are also participants in bi-national mutual aid agreements and respond to public safety incidents within 100KM of either side of the border.

The Tohono O'odham Nation shares a border with Mexico. The reservation extends as far north as Pinal County. As indicated in *Figure 26: Map of Traditional Tohono O'odham Lands*, the Tohono O'odham people inhabit territory extending well into Mexico with many tribal members, and culturally significant places and events occurring south of the U.S.—Mexico border. Tribal public safety agencies require the ability to communicate and coordinate with international public safety agencies during numerous cross-border community and cultural events.

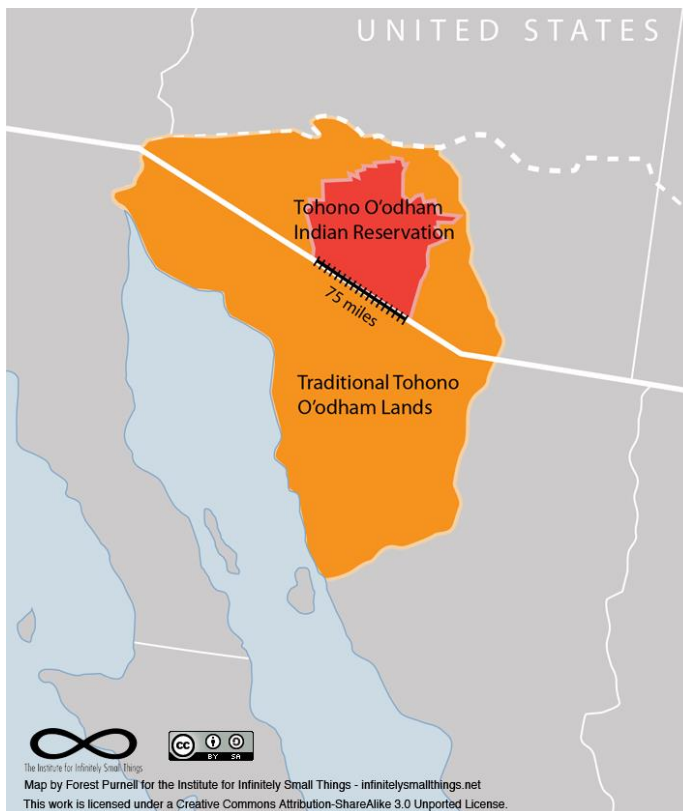


Figure 26: Map of Traditional Tohono O'odham Lands

Border Enforcement and other Public Safety Activity along the Border

While leveling off in recent years, U.S. Customs and Border Patrol activity in the Tucson and Yuma sectors remains a significant portion of all CBP activity along the Southwest Border. With just over 4000 Border Patrol personnel in Arizona, the CBP has one of the largest presences of public safety personnel in the State.

The border is a source of significant activity from apprehensions, smuggling, drug interdiction and other serious criminal activity. In addition, Arizona's harsh desert environment results in significant deaths from those that choose to cross the desert to gain entry into the United States. As seen in *Figure 28: United States Border Patrol Migrant Deaths by Fiscal Year*, Arizona public safety agencies typically respond to over 200 migrant deaths per year. Thirty-six percent of all migrant deaths along the southwest border occurred in Arizona in 2014, down from a high of 69% in 2010. *Figure 29: Pima County Medical Examiner—Migrant Deaths 2004–2014* demonstrates that deaths do not just occur along the border, but well into Arizona, requiring coordination amongst local, tribal, county, state and federal public safety agencies. (It should be noted that this figure only represents migrant deaths reported to the Pima County Medical Examiner's office. Data from other counties were not available.)

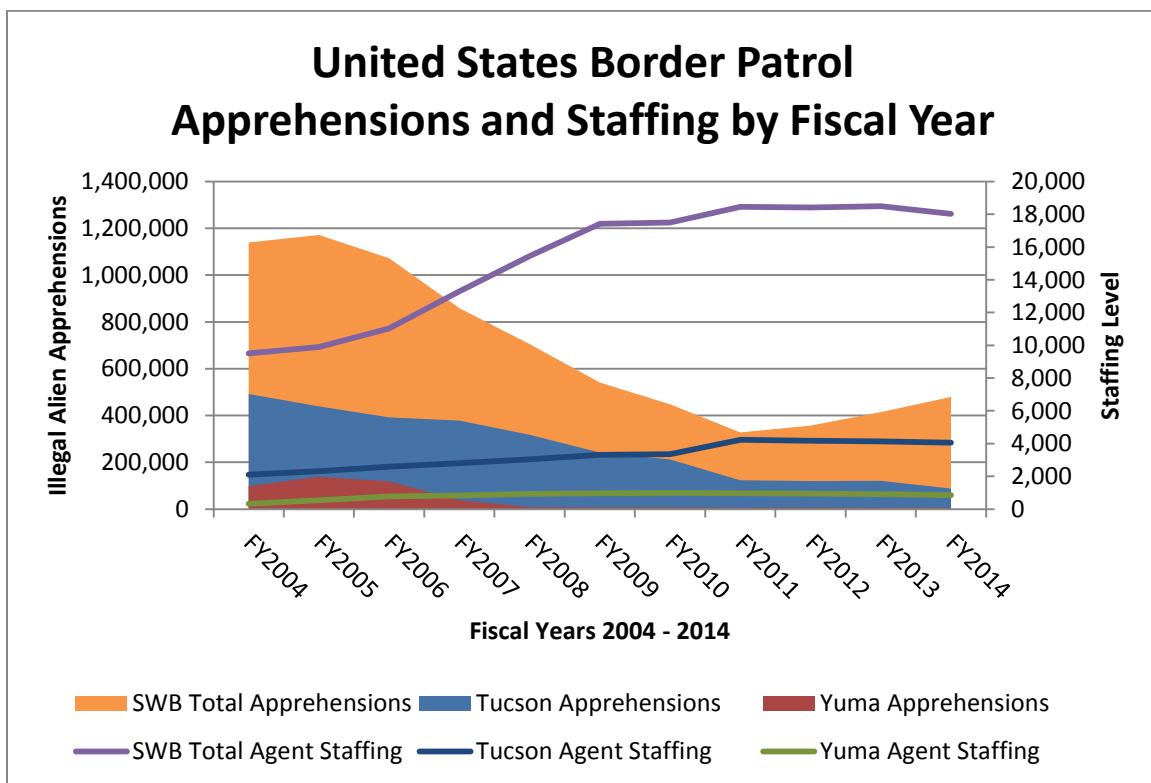
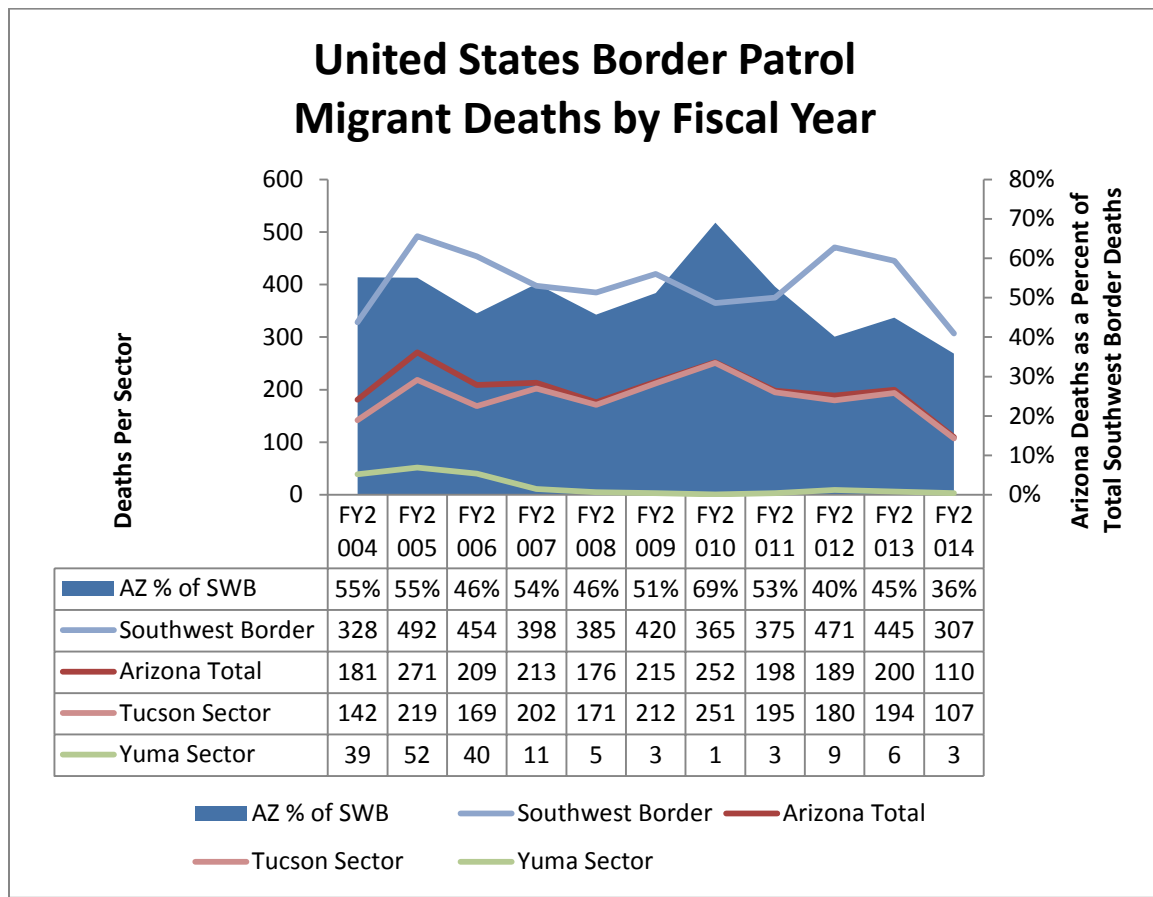


Figure 27: United States Border Patrol Apprehensions and Staffing by Fiscal Year^{13, 14}

¹³ http://www.cbp.gov/sites/default/files/documents/BP%20Staffing%20FY1992-FY2014_0.pdf

Figure 28: United States Border Patrol Migrant Deaths by Fiscal Year¹⁵

¹⁴ http://www.cbp.gov/sites/default/files/documents/BP%20Total%20Apps%2C%20Mexico%2C%20OTM%20FY2000-FY2014_0.pdf

¹⁵ http://www.cbp.gov/sites/default/files/documents/BP%20Southwest%20Border%20Sector%20Deaths%20FY1998%20-%20FY2014_0.pdf

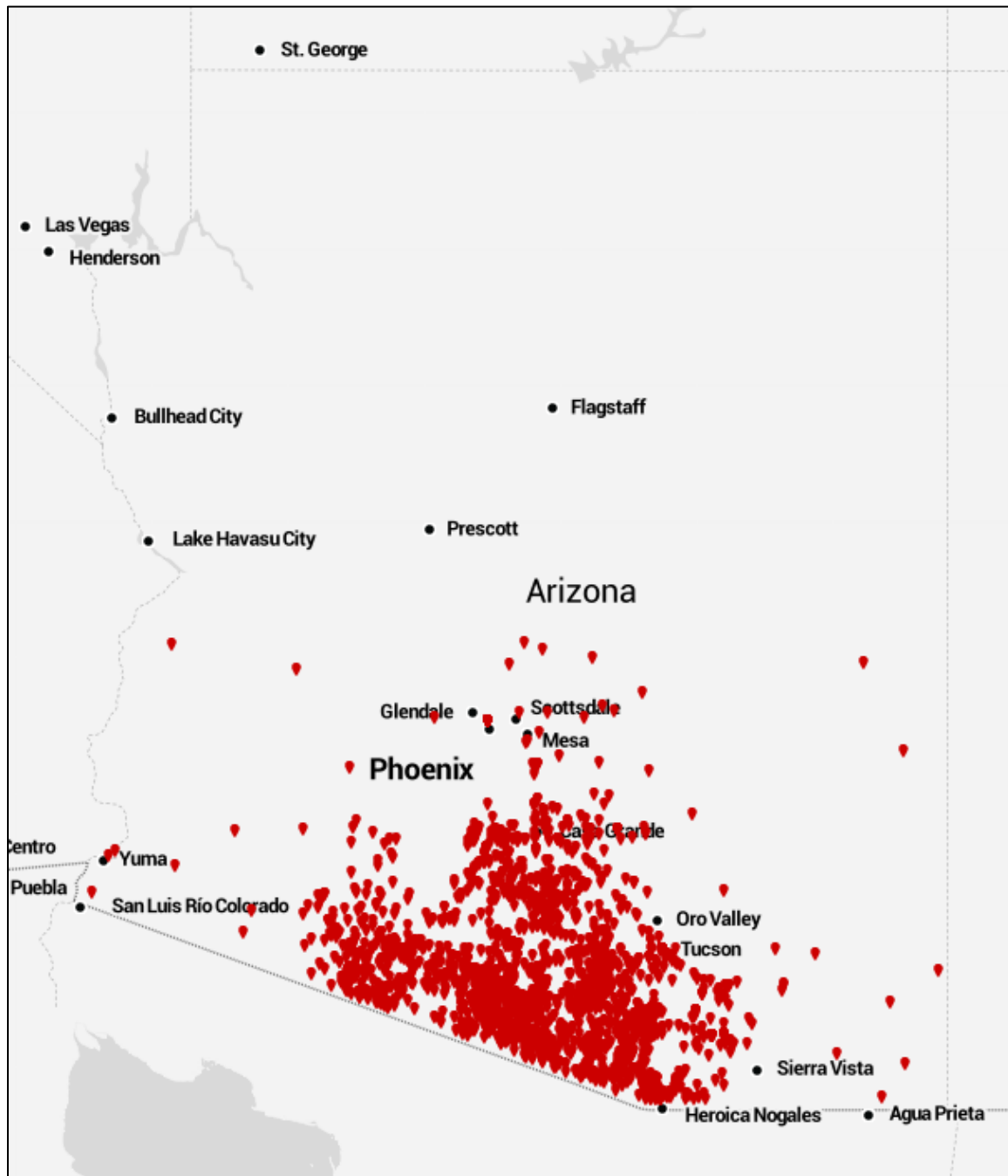


Figure 29: Pima County Medical Examiner—Migrant Deaths 2004–2014¹⁶

¹⁶ Data from the Arizona OpenGIS Initiative at: <http://www.humaneborders.info/>

Tribes

Arizona contains 22 federally recognized Native American Tribes¹⁷. *Figure 30: Lands of Federally Recognized Tribes*, depicts the size and location of Arizona tribal lands. Seven of these tribes are multi-state tribes, with territory in California, Nevada, New Mexico, Utah, or Mexico. *Table 20: Multi-State Tribes with Arizona Territory* depicts these tribes. Contact information for all Arizona tribes is located in *Appendix G: Tribal Nation Contact Information*.

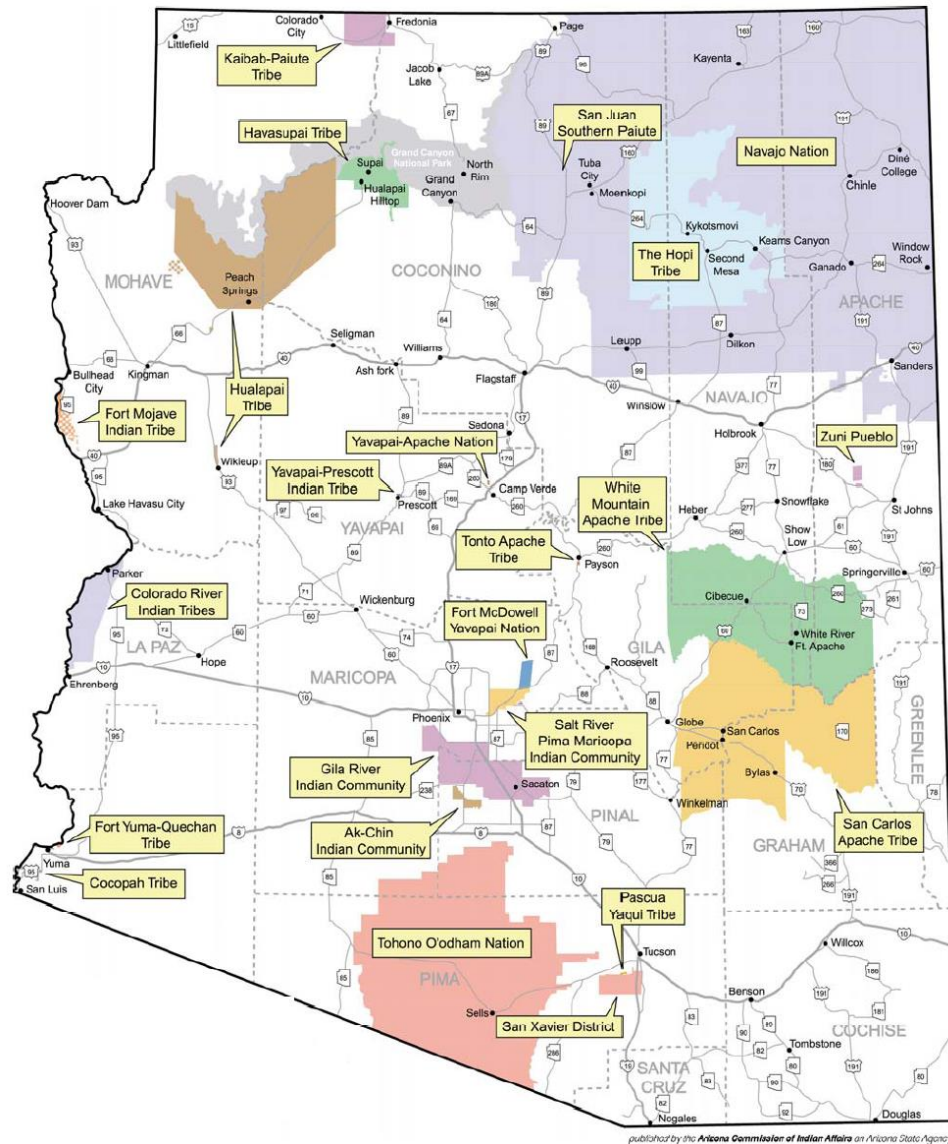


Figure 30: Lands of Federally Recognized Tribes

¹⁷ http://azcia.gov/tribes_of_arizona.asp

The 22 federally recognized Native American Tribes in Arizona are:

- Ak-Chin Indian Community
- Cocopah Tribe
- Colorado River Indian Tribes
- Fort McDowell Yavapai Nation
- Fort Mojave Tribe
- Fort Yuma-Quechan Tribe
- Gila River Indian Community
- Havasupai Tribe
- The Hopi Tribe
- Hualapai Tribe
- Kaibab-Paiute Tribe
- Navajo Nation
- Pascua Yaqui Tribe
- Pueblo of Zuni
- Salt River Pima-Maricopa Indian Community
- San Carlos Apache Tribe
- San Juan Southern Paiute
- Tohono O'odham Nation
- Tonto Apache Tribe
- White Mountain Apache
- Yavapai-Apache Nation
- Yavapai-Prescott Indian Tribe

Table 20: Multi-State Tribes with Arizona Territory

Tribe	States
Colorado River Indian Tribes	AZ, CA
Fort Mojave Indian Tribe	AZ, CA, NV
Kaibab-Paiute Tribe	AZ, UT
Pueblo of Zuni	AZ, NM
Quechan Indian Tribe	AZ, CA
Tohono O'odham Nation	AZ, Mexico
Navajo Nation	AZ, NM, UT

There are six tribally owned and operated telecommunications companies in Arizona (See *Table 21: Tribes with FCC Recognized Telecommunications Companies*). While the Navajo Nation does not have an FCC recognized telecommunications company, the Nation's Telecommunications Regulatory Commission governs all telecommunications activities within the Nation. Since infrastructure sharing may play a role in the development of FirstNet, we attend meetings of the telecommunications companies and the Regulatory Commission when possible.

Table 21: Tribes with FCC Recognized Telecommunications Companies



Tribe	Telecommunications Company
Fort Mojave Indian Tribe	Fort Mojave Telecommunications, Inc.
Gila River Indian Community	Gila River Telecommunications, Inc.
Hopi	Hopi Telecommunications, Inc.
Salt River Pima-Maricopa Indian Community	Saddleback Communications
San Carlos Apache Tribe	San Carlos Apache Telecommunications Utility, Inc.
Tohono O’odham Nation	Tohono O’odham Utility Authority

Further, communication about casino specific criminal activity is being shared among tribes. This activity tends to skip from one reservation to the next, leading to the need for coordination. The five tribes participating in this pilot project named the Tribal Law Enforcement Consortium of Arizona are: Ak-Chin Indian Community, Fort McDowell Yavapai-Apache Nation, Gila River Indian Community, Salt River Pima-Maricopa Indian Community, and Tohono O’odham Nation.








Counties







Arizona is comprised of 15 counties. Each county has an elected board of supervisors. Population, area information and geographic depiction from Wikipedia are included in *Table 22: Arizona Counties*.¹⁸

Table 22: Arizona Counties

County	Population	Area	Map
Apache County	69,980	11,218 sq mi (29,054 km ²)	
Cochise County	127,866	6,219 sq mi (16,107 km ²)	

¹⁸ https://en.wikipedia.org/wiki/List_of_counties_in_Arizona

County	Population	Area	Map
Coconino County	134,421	18,661 sq mi (48,332 km ²)	
Gila County	51,994	4,796 sq mi (12,422 km ²)	
Graham County	34,769	4,641 sq mi (12,020 km ²)	
Greenlee County	7,754	1,848 sq mi (4,786 km ²)	
La Paz County	20,172	4,513 sq mi (11,689 km ²)	
Maricopa County	3,990,181	9,224 sq mi (23,890 km ²)	
Mohave County	194,944	13,470 sq mi (34,887 km ²)	

County	Population	Area	Map
Navajo County	111,273	9,959 sq mi (25,794 km ²)	
Pima County	1,003,235	9,189 sq mi (23,799 km ²)	
Pinal County	324,962	5,374 sq mi (13,919 km ²)	
Santa Cruz County	42,845	1,238 sq mi (3,206 km ²)	
Yavapai County	212,635	8,128 sq mi (21,051 km ²)	
Yuma County	190,557	5,519 sq mi (14,294 km ²)	

Arizona Wireless Broadband Penetration

In the 2015 Broadband Progress Report, the FCC established broadband benchmark speeds of 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads.¹⁹ To qualify as LTE, peak data rates must achieve 100Mbps download and 50Mbps upload within a 20MHz bandwidth with a latency of less than 5 milliseconds for up to 200 active users²⁰. Using data provided by the Digital Arizona Program, Arizona's State Broadband Initiative (SBI), we have learned that the broadband services typically available outside of Arizona's major urban cores, for both fixed and mobile broadband services, rarely rise to the level of performance demanded by the FCC's new definition as illustrated by *Figure 31: Maximum Advertised Download Speed >25 Mbps—All Technologies*. From speed tests conducted by the FCC nationally and in Arizona by the SBI Program, we know when fiber-based middle mile is lacking in communities, typical Digital Subscriber Line (DSL) and point-to-multipoint wireless services to homes usually falls significantly short of their advertised data rates. The lack of fiber to cell sites also creates significant throughput constraints for mobile services in many rural locations, even when signal strength is more than adequate. These same problems do not appear to be present in the urban centers of the state where a robust and competitive fiber backbone infrastructure exists. Additionally, broadband affordability is still an issue in the state, especially pricing parity between rural and urban areas. The SBI program did a comparative study in 2014 on the differences in available speeds and pricing for schools between Utah and Arizona. They learned rural Arizona schools pay, on average, 10 to 20 times as much per megabit per second per month as rural Utah schools, and maximum speeds available were on average 10 times slower. This phenomenon is largely the result of Arizona lacking the middle-mile fiber infrastructure built in Utah.

¹⁹ http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0224/FCC-15-10A1.pdf

²⁰ http://transition.fcc.gov/pshs/docs/LTE_Info_Sheet_09082010.pdf

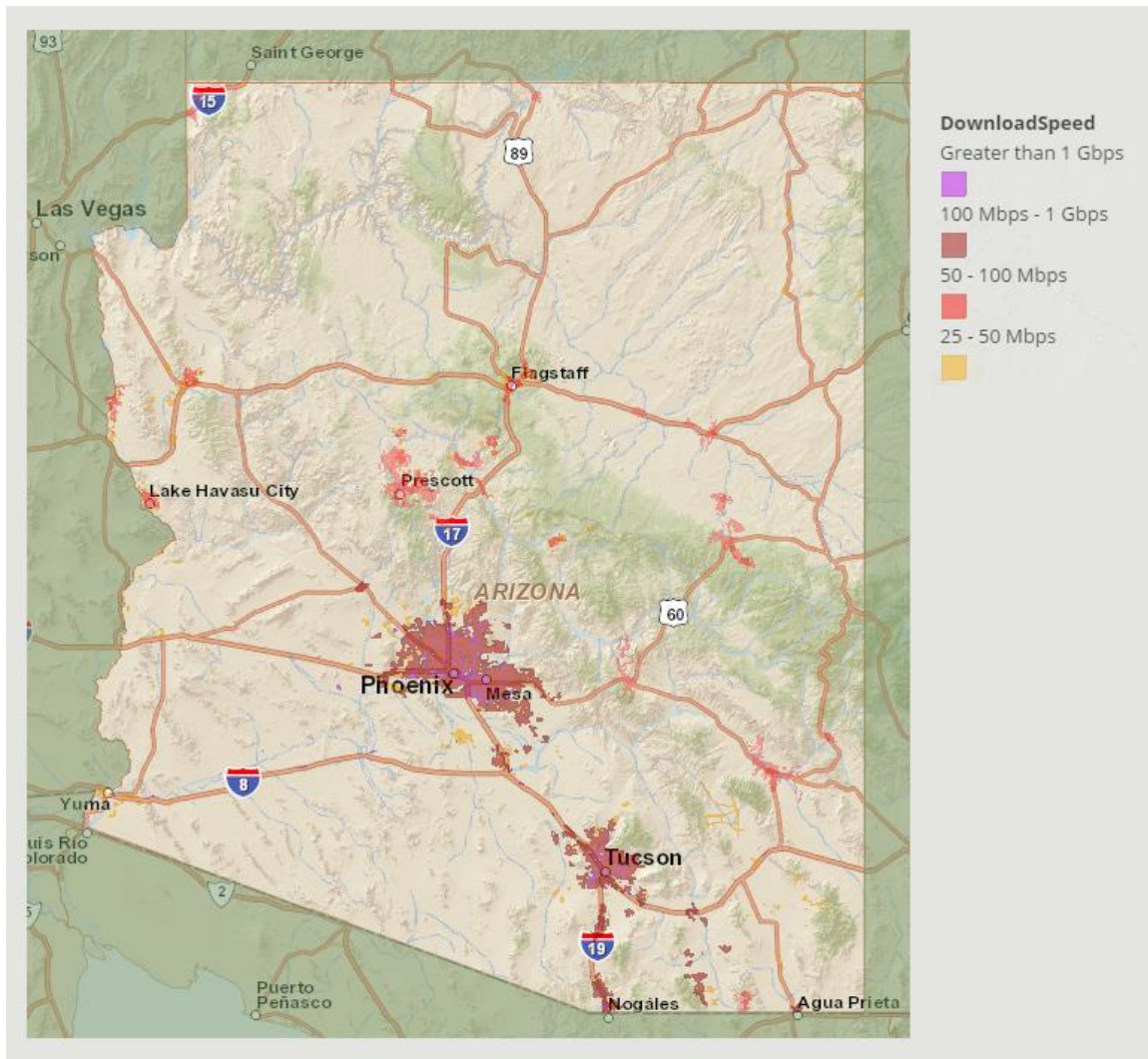


Figure 31: Maximum Advertised Download Speed >25 Mbps—All Technologies

With regard to carrier competition in rural Arizona, *Figure 32: Broadband Provider Service Areas—All Technologies Except Satellite* indicates there are four to six carriers in significant portions of the rural areas. However, it is believed the data provided by the carriers overstates the level of competition and the amount of actual physical infrastructure because, in many cases, services are offered by resellers based on the limited infrastructure of a primary carrier.

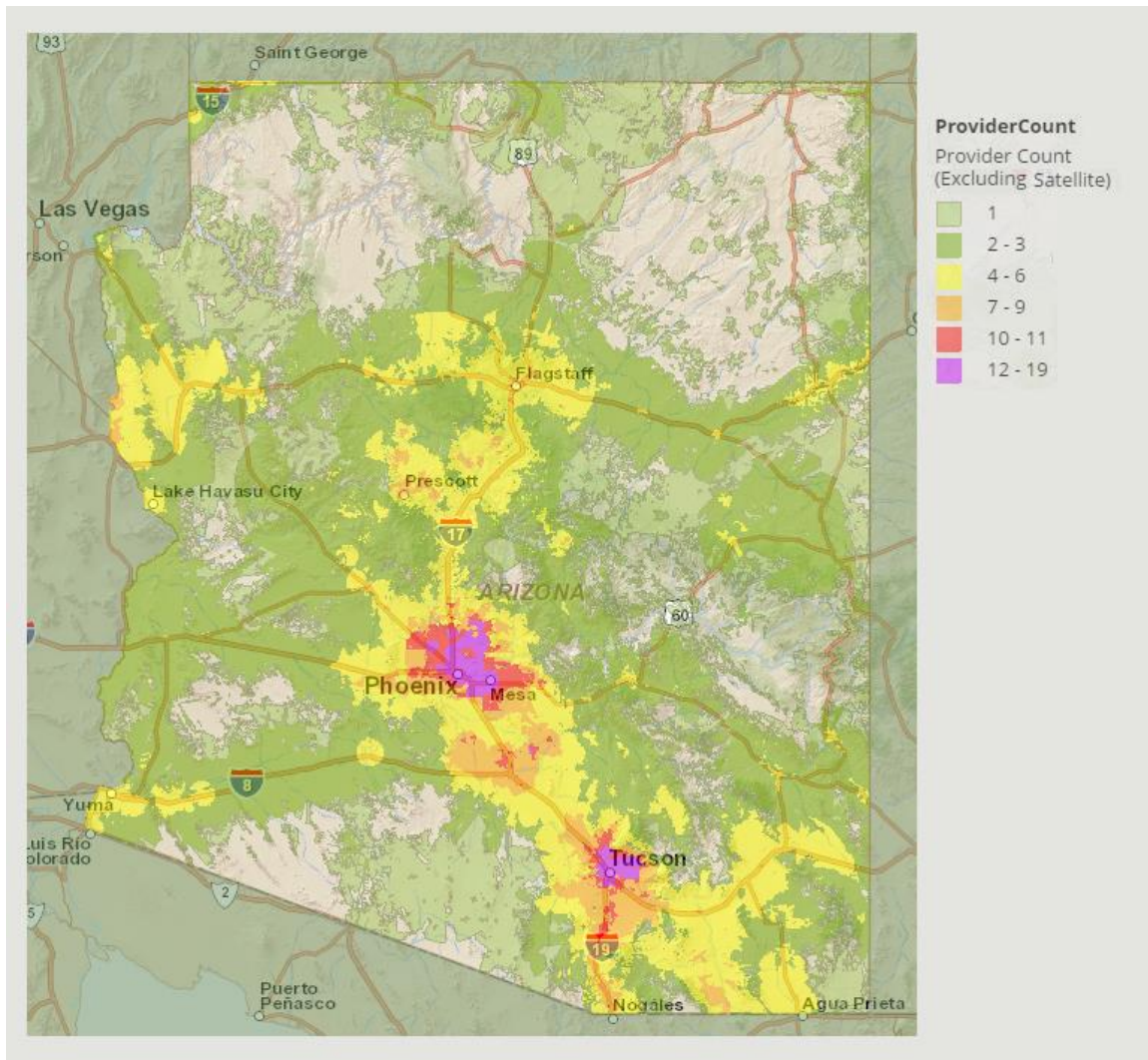


Figure 32: Broadband Provider Service Areas—All Technologies Except Satellite

Community Broadband Planning Map

The Community Broadband Planning Map was designed to help community planners make better broadband decisions for their community and for advanced users to optimize and exploit the available data. The central idea behind this added map version was to present a set of tools to help planners identify their study area, find all combinations of broadband providers, service types and advertised download/upload speeds, and quickly chart out the population and housing data showing the number of people, average median age, households, average household size, household incomes, total area, etc.

The Community Broadband Planning Map is available online at: <http://broadbandmap.az.gov/broadbandapp/>.

Arizona Public Safety Highlights

Law Enforcement

Arizona is comprised of a diverse community of law enforcement agencies. The Arizona Peace Officer Standards and Training Board (POST), the standards and training body for Arizona law enforcement officers, tracks 165 individual law enforcement agencies with over 14,600 sworn officers. *Figure 33: Number of Law Enforcement Agencies in Arizona* breaks down the type of law enforcement officers to show the Arizona agencies certified by POST. Certified officers can be found in traditional local, state, county agencies, as well as nineteen tribal agencies. In addition, there are certified officers found in city/county attorney's offices, fire agencies, parks and recreation, as well as several community colleges and state universities.

Figure 34: Number of Sworn Law Enforcement Officers in Arizona provides an overview of the number of sworn officers within type of organization around the state. This number ranges from one sworn officer at specialty organizations and law enforcement agencies to many local law enforcement agencies around the state with double digit numbers to large organizations such as the Department of Public Safety with 1150 sworn officers up to Phoenix Police Departments with 2900 sworn officers. The number of sworn officers does not impact the need for data as, for the most part their end goal is the same, keeping their communities safe, investigate and solve crimes and utilize whatever tools are available to complete these missions.

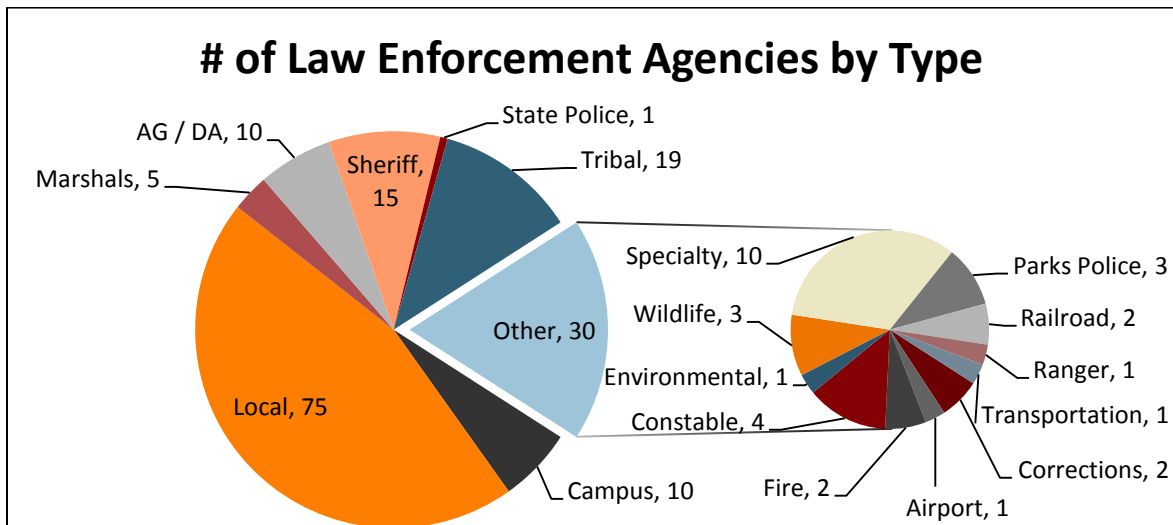


Figure 33: Number of Law Enforcement Agencies in Arizona

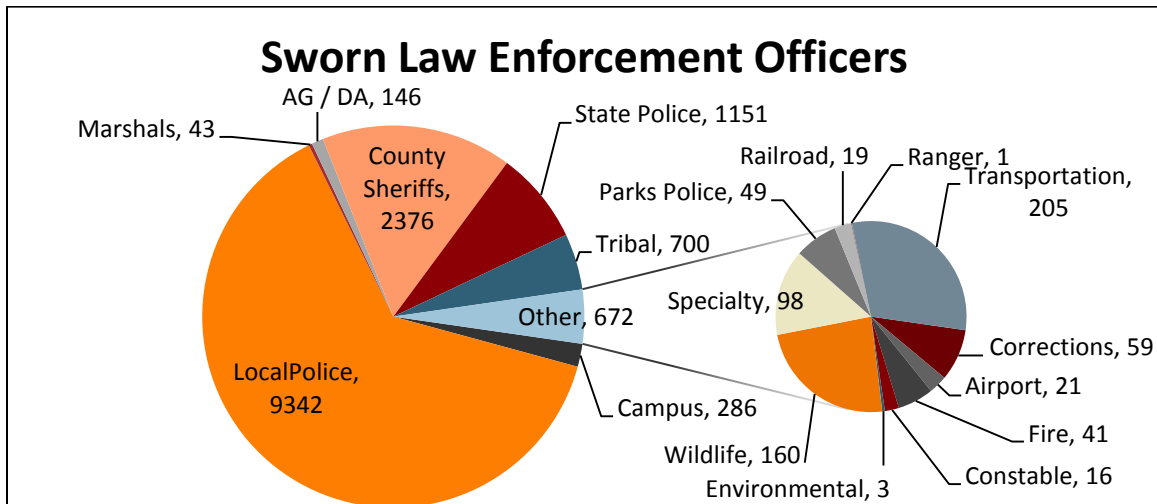


Figure 34: Number of Sworn Law Enforcement Officers in Arizona

Fire Service

Based on a review of data provided by the Arizona Fire Chiefs Association, communities receive fire protection and medical care from over 288 private, volunteer, tribal and municipal fire and medical departments. The number of each type of agency can be seen in *Figure 35: Fire Service Agency by Type*. There are distinct differences between these departments, but all are responsible for very similar missions. Fire departments are part of a municipal government and are funded through the city's general funds and generally only protect the area within the boundaries of their city. Fire Districts are special taxing districts and are independent of any city or county government and provide service to multiple geographical areas which may include unincorporated county areas and municipalities. Several fire departments on tribal land work in conjunction with Bureau of Indian Affairs, who provides wildfire support to tribal agencies. The Palo Verde Nuclear Generating Station and Raytheon have in house fire departments, and have a need to interoperate with their neighboring municipal fire departments.

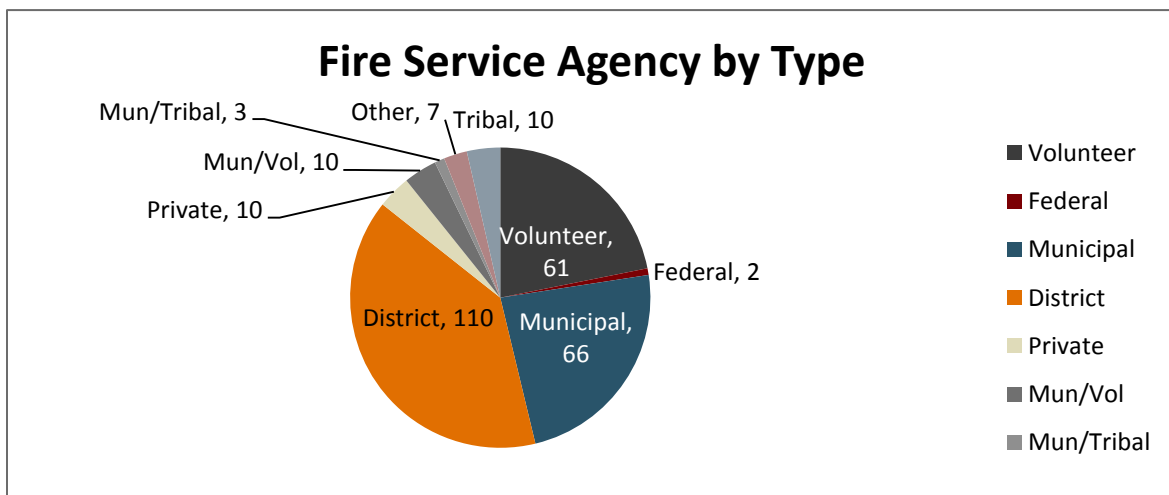


Figure 35: Fire Service Agency by Type

Emergency Medical Service

Arizona emergency medical services are provided by 78 ground ambulance companies and 15 air ambulance companies²¹. These medical services are operated by both private and municipal organizations and staffed by over 19,000 certified Emergency Medical Care Technicians. Of the EMS providers, certified at the Emergency Medical Technician (EMT)-Basic level, approximately thirty-two percent of them have transitioned to the new, nationally approved level of EMT. Intermediate and Advanced EMT levels are not recognized in the state.

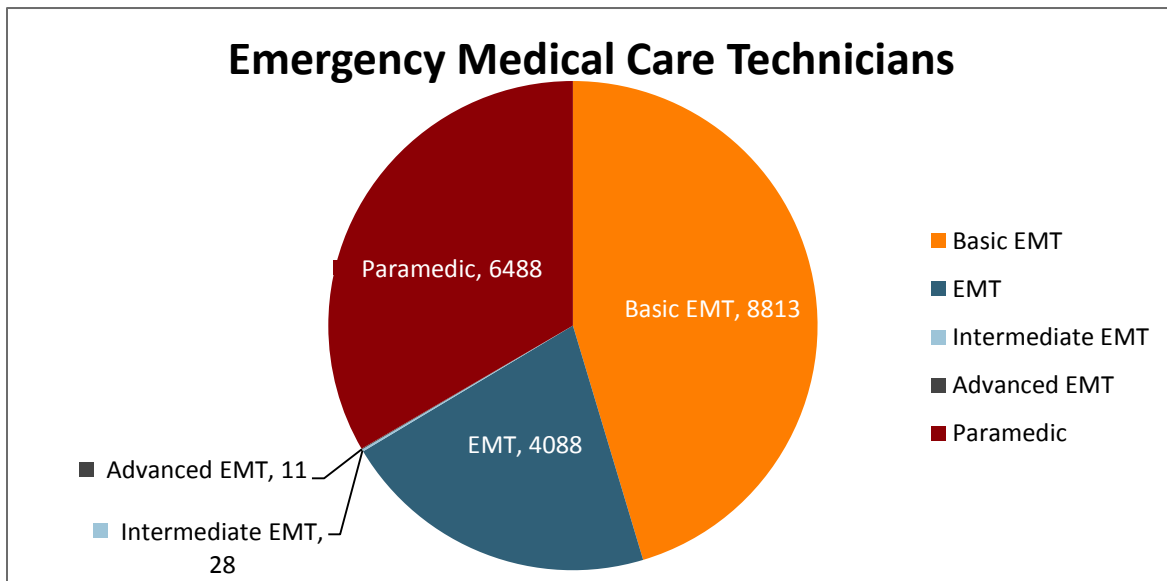


Figure 37: Emergency Medical Care Technicians in Arizona

Bureau of Emergency Medical Services Regions

The Arizona Department of Health Services Bureau of Emergency Medical Services divides Arizona into four primary regions. These regions are grouped along mutual aid response agreement lines that recognize geographical and topographical realities to better foster the ability for responders within each region to regularly collaborate with one another.

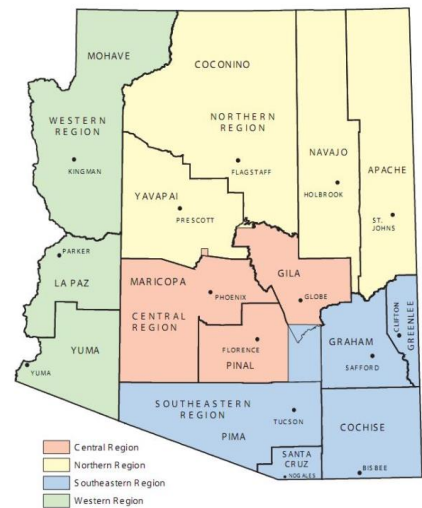


Figure 36: Emergency Medical Services Regions

²¹ <http://www.azdhs.gov/bems/documents/ambulance/air/LicensedAirProviders.pdf>

Corrections

Correctional facilities in Arizona are state, federal and privately run. Correctional facilities have very strict rules about what can and cannot be used within their facilities for the safety of their staff and their inmates. These facilities are normally found in more remote areas of the state and rely on their law enforcement and fire counterparts in neighboring jurisdictions to provide support with escalated incidents such as fire, escapes and riots. The State of Arizona has two corrections agencies: the Department of Corrections and the Arizona Department of Juvenile Corrections. There are approximately 9,000 correctional staff in the State. *Figure 38: State Agency Correctional Staff* provides a breakdown of the various types of staff at Arizona's correctional facilities.

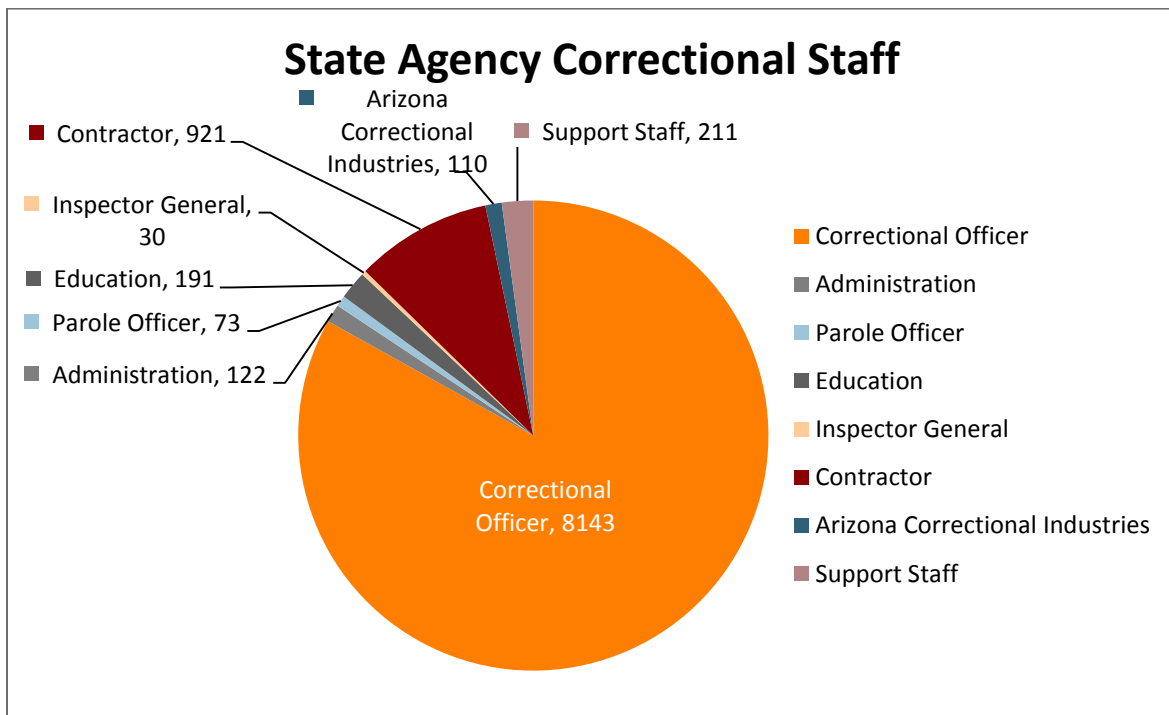


Figure 38: State Agency Correctional Staff

Legal Barriers

Arizona FirstNet has conducted a preliminary analysis of obstacles, laws and /or legal issues that may impede Arizona's ability to fully participate in FirstNet. We will continue to research these issues as part of the SLIGP project. Specific Statutes and Executive Orders that might impact the consultation process or adoption of FirstNet are included in Appendix A: Arizona Statutes and Executive Orders.

Barriers to Consultation

Arizona does not anticipate any existing laws or other legal issues that would prevent Arizona FirstNet from fully participating in the State Consultation with FirstNet, or the development of the State Plan. Further, Arizona does not anticipate any existing laws or other legal issues that would prevent Arizona's Governor from making an informed decision and response to FirstNet's proposed Arizona State Plan.

Barriers to Participation and Adoption of FirstNet

Arizona does not anticipate any existing laws or other legal issues that would prevent Arizona agencies from fully participating in the network if they so choose. However, we have identified a number of potential obstacles to participation and adoption that FirstNet should consider in the planning and deployment of the network in Arizona.

Possible Obstacles—Arizona Specific

- Article 9, § 7 of the Arizona Constitution, commonly referred to as the Gift Clause, provides: *Neither the state, nor any county, city, town, municipality, or other subdivision of the state shall ever give or loan its credit in the aid of, or make any donation or grant, by subsidy or otherwise, to any individual, association, or corporation[.]* This clause will need to be properly understood in order for FirstNet to enter into any infrastructure sharing agreements with Arizona Agencies.
- Land use rules in Arizona are very stringent with a number of concerns that can come into play for any new site locations.
- Many small cities and even counties in Arizona are in financially difficult positions requiring reductions in public safety staff. Therefore, paying for any data service would need to be off-set by a strong positive Return on Investment and clearly demonstrate increased efficiencies.
- Many existing State and local Arizona communications sites are not on publicly owned land. This may pose a challenge for solutions that rely on infrastructure sharing arrangements.
- Much of Arizona's existing public safety communications infrastructure was built using federal grant funds. This infrastructure will have restrictions on commercial use which will be an issue with potential Public / Private Partnership arrangements.
- U.S. Forest Service (USFS) and BLM sites (especially new sites) require long lead times to satisfy permitting and National Environmental Policy Act (NEPA) considerations. As

noted in the Arizona Overview section on Land Ownership above, less than 20 percent of Arizona's landmass is privately owned, with the majority owned by federal agencies.

- 25 percent of land mass in Arizona is on tribal land, requiring negotiation with each sovereign tribal nation to gain access to and usage of the land. Within tribal lands, there are numerous culturally significant and important sites with restrictions on access and infrastructure development that should be considered in the planning and deployment of the network in Arizona.
- Rural areas in Arizona have limited commercial and public safety wireless infrastructure and coverage. FirstNet will have to increase coverage and reliability to these areas in order for agencies to adopt.
- Arizona has many military installations that have agreements with local public safety agencies to respond to incidents on the installation. Military Information Technology (IT) policies will not allow wireless devices to connect to their network without special encryption and policy exceptions.
- As detailed in the Arizona Overview section on Geography above, Arizona has significant geographic, terrain and topography features that must be considered when developing wireless systems that avoid radio frequency (RF) shadowing or "dead zones". Examples include:
 - The mountainous red rocks of Sedona.
 - The numerous shallow canyons of Santa Cruz County in southern Arizona.
 - The deep canyon in Grand Canyon and Havasupai reservation that requires infrastructure to be built on the rim and pointed downward.
 - The community of Bouse, AZ is in a "bowl" that prevents half of the town from having cell coverage.
- The lack of back-haul physical layer diversity, in particular in northern Arizona, is a strategic problem that will need to be addressed during the development of the network.

Possible Obstacles—Southwest Border Region

- Placing infrastructure on land in the border region can require additional cross-border coordination to avoid interfering with other border frequencies.
- Increased consideration should be given to site hardening and security in the border region, as well as to efforts to mitigate intentional spectrum jamming by cartels.
- If Mexico moves to the Asia Pacific Telecommunity, the U.S.—Mexico border NPSBN communications uplinks will conflict with Mexican public safety communications uplinks.

Possible Obstacles—Other

- Agencies may not have the ability to sublease to FirstNet or Public/Private Partnerships.
- Agencies that are leasing from other public safety entities (e.g. State leasing from the county through the sheriff) have generally established cooperative leases with rates for public safety use which may be far lower than commercial lease rates.
- Agencies granting access to existing State or local sites will expect some compensation or consideration from FirstNet or through Public/Private Partnerships.
- Some agencies have existing data plan contracts with carriers. Moving to the FirstNet system would require waiting for contracts to expire or subject the agency to early-termination penalties.
- The sheer volume of required NEPA related activity could be problematic.
- It can take significant time and funds to complete documentation required for FCC, NEPA, Historical Preservation and Tribal Preservation on older existing and new sites.
- Many agencies rely on Bring Your Own Device (BYOD), and Bring Your Own Data Plan (BYODP) policies where responders receive a subsidy to help off-set the cost of data service. In these instances, the agency typically does not cover the full cost of service or the device.
- Some agencies use multiple carriers to address coverage / reliability issues, as well as to provide a redundancy when the primary network is unavailable.
- Some communities have enacted restrictive zoning laws prohibiting or restricting the building of new infrastructure, especially radio towers. This poses a significant challenge as many of these communities will need infrastructure to improve coverage and make FirstNet a viable option for the agencies.
- Certain public safety agencies, such as the Department of Corrections, will have restrictive agency-level policies that prohibit the use of wireless devices. These agencies may need specific devices or other technology to allow them to take advantage of FirstNet.
- Communities have different requirements for language that must be included (or excluded) from legal agreements. We anticipate Arizona would leverage the extensive governance structures in place in executing any required agreements between different units of government should such a need arise. State, county, and local agencies have executed countless contracts, sharing agreements and MOUs/MOAs through the deployment of their radio systems and, accordingly, public safety in Arizona has a significant library of reference material from which to model future agreements.

Wireless Contract Vehicles

Based on preliminary survey results from 171 agencies who have attended at least one outreach event, the majority of Arizona's 500 public safety agencies rely on wireless data contracts offered through the Western States Contracting Alliance (WSCA). While indicated separately in *Figure 39: Wireless Data Contracts by Type*, the State wireless contracts and many local wireless contracts use the WSCA as a baseline reference contract. The four State of Arizona contracts are listed in *Table 23: State of Arizona WSCA Wireless Contracts*. In addition, numerous agencies, particularly smaller agencies in rural Arizona, do not have specific contracts for wireless data, but instead provide responders with a subsidy to off-set the cost of using their personal data plans. Across all contract types, 70 percent of respondents have wireless data services provided by Verizon Wireless. See *Appendix H: Wireless Services Contract* for full contract language of the State of Arizona WSCA Wireless Contracts.

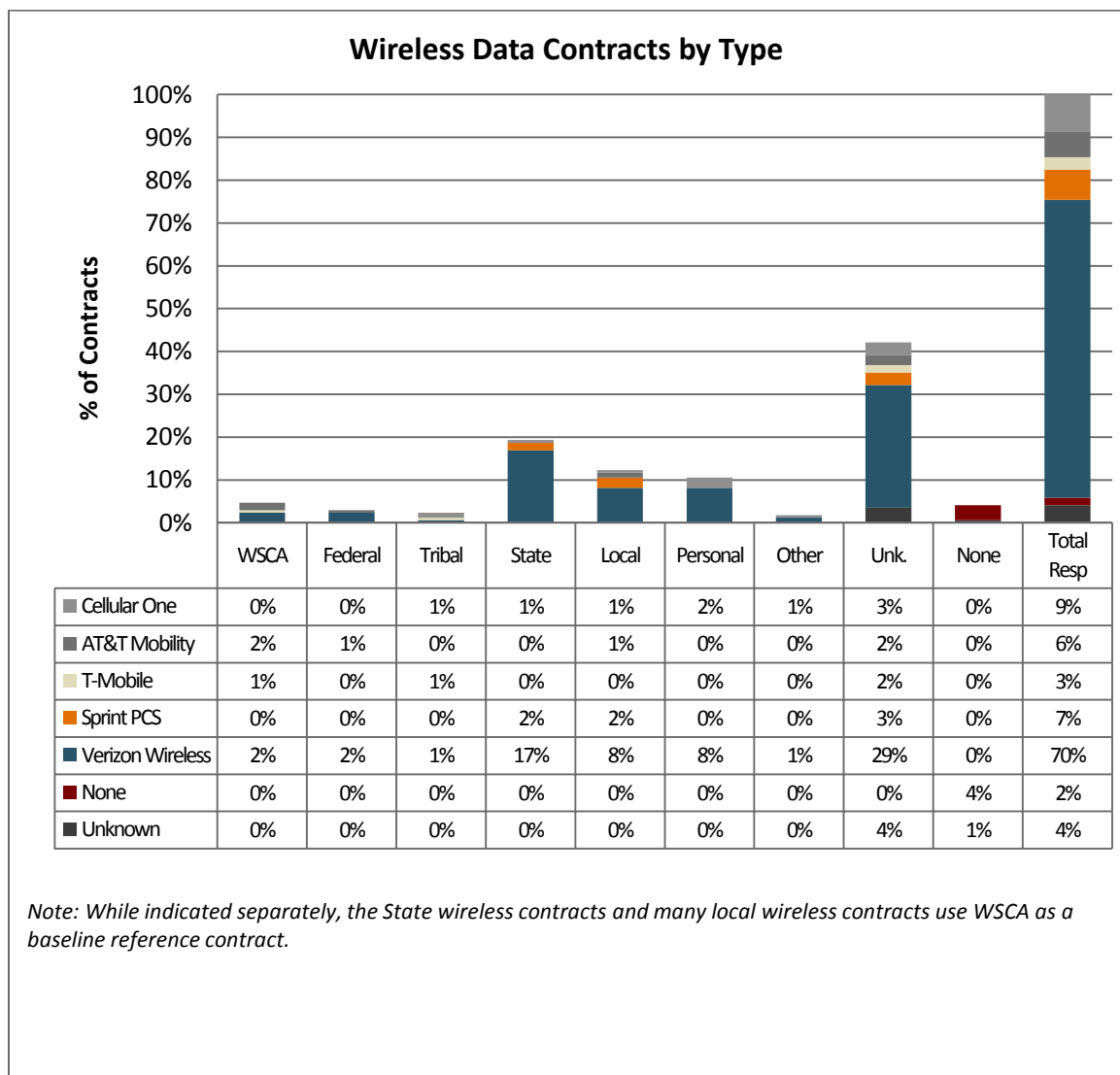


Figure 39: Wireless Data Contracts by Type

Table 23: State of Arizona WSCA Wireless Contracts

Contract #	Description	Vendor Name	Begin Date	End Date
ADSP013-032444	WSCA Wireless	AT&T Mobility	11/20/2012	11/01/2015
ADSP013-034099	WSCA Wireless	Verizon Wireless (Cellco Partnership)	11/29/2012	10/31/2015
ADSP013-034209	WSCA Wireless	SPRINT SOLUTIONS INC	01/16/2013	10/31/2015
ADSP013-034339	WSCA Wireless	T-MOBILE USA INC	12/10/2012	11/01/2015

Appendix A: Arizona Statutes and Executive Orders

The following Constitutional provisions, Statutes and Executive Orders may be of interest to FirstNet as part of the planning, implementation and adoption of FirstNet in Arizona.

Arizona Constitution Article 9, § 7: Gift or loan of credit; subsidies; stock ownership; joint ownership

Section 7²². Neither the state, nor any county, city, town, municipality, or other subdivision of the state shall ever give or loan its credit in the aid of, or make any donation or grant, by subsidy or otherwise, to any individual, association, or corporation, or become a subscriber to, or a shareholder in, any company or corporation, or become a joint owner with any person, company, or corporation, except as to such ownerships as may accrue to the state by operation or provision of law or as authorized by law solely for investment of the monies in the various funds of the state.

Executive Order 2006-14 Consultation and Cooperation with Arizona Tribes

Executive Order 2006-14²³ required each Executive Branch agency to:

- Develop and implement a tribal consultation policy to guide their work and interaction with federally-recognized Tribes in Arizona;
- Designate a principle point of contact for tribal issues; and
- Review their tribal consultation policies each year and submit an electronic report to describe all action undertaken as a result of implementation of these policies.

ADOA has developed a Policy Statement²⁴ complying with Executive Order 2006-14.

A.R.S. § 12-713. Emergency call system; public safety radio communications network; liability standard²⁵

A person, private entity or public entity or any of its employees that is involved in developing, operating, implementing, maintaining or participating in a 9-1-1 emergency telephone system or similar emergency dispatch system or a public safety radio communications network or similar network is not liable for civil damages that result from an act or omission in connection with developing, operating, implementing, maintaining or participating in a 9-1-1 emergency telephone system or public safety radio communications network or a similar emergency system

²² <http://www.azleg.gov/FormatDocument.asp?inDoc=/const/9/7.htm>


²³ http://azcia.gov/Documents/TCP/EO_2006-14.pdf

²⁴ http://azcia.gov/Documents/TCP/2011/FFY11_TCP_ADOA.pdf

²⁵ <http://azleg.gov/FormatDocument.asp?inDoc=/ars/12/00713.htm&Title=12&DocType=ARS>

or network unless the person or entity acted knowingly or had reason to know the facts that would lead a reasonable person to realize that the person's or entity's act or failure to act not only created an unreasonable risk of bodily injury to others, but also involved a high probability that substantial harm would result.

Appendix B: AZPSBN Charter



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Arizona Public Safety Wireless Broadband Network Workgroup (AZPSBN) Charter

The Arizona Public Safety Broadband Network (AZPSBN) Workgroup is established in order to provide advice and make recommendations on matters related to the National Public Safety Broadband Network (NPSBN) and the AZPSBN.

The workgroup shall:

- Track NPSBN progress, in particular:
 - The Interoperability Board's minimum technical requirements for the NPSBN
 - First Net's progress on RAN planning
 - Input/decisions from other agencies such as the FCC, NTIA, DHS, OEC, etc.
- Work with the Arizona public safety community to advise on State-wide standards for interoperability on the NPSBN.
- Work with the Arizona public safety community to plan how Arizona will interact with the NPSBN.
- Advise ADOA-ASET on preparing a grant request under the State and Local Implementation Grant Program.
- Provide input to the SCIP update effort as it relates to broadband planning.
- Plan and prepare for the FirstNet RFP proposal by recommending minimum criteria based on Arizona's public safety needs.
- Perform the research and analysis required to provide substantive input on the Opt-In/Opt-Out decision.
- Work with the Digital Arizona project and 9-1-1 programs to assure integration and to identify synergies.
- Report back to ADOA-ASET on progress and key recommendations.

Figure 40: Arizona Public Safety Broadband Network Workgroup Charter

Appendix C: Arizona Public Safety Wireless Broadband Network Workgroup

Table 24: Arizona Public Safety Wireless Broadband Network Workgroup

Name	Agency	Location	Contact Info
Cathy Allen	Coconino County Sheriff's Office	Coconino	callen@coconino.az.gov
Julie Augeri	Emergency Preparedness Administrator	State	JAUGERI@azcorrection.s.gov
Edwin Barlow	Colorado City Fire Department	Mohave	edb@hccfd.org
Roger Baune	CJIS Security Team	State	rbaune@azdps.gov
Harry Beck	Mesa Fire	Maricopa	harry.beck@mesaaz.gov
Christina Bermudez	Nogales Police Department	Santa Cruz	cbermudez@nogalesaz.gov
Les Caid	Rio Rico Fire District	Santa Cruz	LCaid@rioricofire.org
Kim Campbell	ADOT - Emergency Planner	State	kcampbell@azdot.gov
Steve Campbell	El Mirage Police Department	Maricopa	scampbell@cityofelmirage.org
Carol Capas	Cochise County Sheriff's Office	Cochise	ccapas@cochise.az.gov
Eddie Carrera	City of Yuma IT	Yuma	eddie.carrera@yumaz.gov
Chris Chambers	Buckskin Fire Dept.	La Paz	chief@buckskinfiredepartment.com
Mark Christian	Coconino County Emergency Management Office	Coconino	mchristian@coconino.az.gov
Dave Collett	Peoria IT	Maricopa	dave.collett@peoriaaz.gov
Jesse Cooper	Phoenix Police Department	Maricopa	jesse.cooper@phoenix.gov
Alex Deshuk	Mesa IT	Maricopa	alex.deshuk@gmesaaz.gov
Brian Douglas	Graham County Emergency Management	Graham	bdouglas@graham.az.gov
Don Engler	Payson Police	Gila	dengler@paysonaz.gov
David Felix	Regional Wireless Cooperative (RWC)	Maricopa	David.Felix@phoenix.gov
Dean Funk	DOD-MCAS Yuma S6 (fire)	Military	dean.funk@usmc.mil
Mike Garcia	Tucson Fire Department	Pima	mike.garcia@tucsonaz.gov
Art Goldberg	BLM - Technical Services Branch Chief	Federal	agoldberg@blm.gov
Richard Guinn	Apache County Sheriff's Office	Apache	rguinn@co.apache.az.us

Name	Agency	Location	Contact Info
Joe Gulotta	Tucson Fire Department	Pima	joe.gulotta@tucsonaz.gov
Chief Pat Hancock	Snowflake Fire	Navajo	snowflakefirechief@yahoo.com
John Hannon	Rural Metro Fire Dept. - Chief	Yuma	john.hannon@rmetro.com
Cori Hayes	Mesa Fire	Maricopa	Cori.hayes@mesaaz.gov
Bob Hollister	Cochise County	Cochise	n7ink@cox.net
Mark Howard	Arizona Division of Emergency Management	State	Mark.Howard@azdema.gov
James Hughes	Maricopa Police Department	Pinal	james.hughes@maricopa-az.gov
Brian Hunt	Yavapai County Sheriff's Office	Yavapai	Brian.Hunt@yavapai.us
Luke Johnson	Ft Mojave Tribe	Mohave	LukeJohnson@fortmojave.com
Steven Johnson	Marana Police Department	Pima	sjohnson@marana.com
Jeremy Knoll	DPS Wireless	State	jknoll@azdps.gov
Rich Langevin	Maricopa County Department of Emergency Management (MCDEM)	Maricopa	LangevinR@mail.maricopa.gov
Kyle Lehmkuhl	National Park Service	Federal	kyle_lehmkuhl@nps.gov
Malcolm Lewis	Tohono O'odham Exec Director Public Safety	Tribal	malcolm.lewis@tonaton-nsn.gov
Claudia Leyva	Yuma Police Department	Yuma	claudia.leyva@yumaaz.gov
Jeff Lineberry	Navajo County IT	Navajo	Jeff.Lineberry@navajocountyaz.gov
Dan Martin	Pinal County IT	Pinal	daniel.martin@pinalcountyaz.gov
Christine Medley	Ft Mojave Tribe	Mohave	christinemedley@fortmojave.com
Terry Mullins	Department of Health Services	State	terry.mullins@azdhs.gov
Doug Mummert	Phoenix Fire	Maricopa	doug.mummert@phoenix.gov
Andy Murray	ADOT	State	RMurray@azdot.gov
Steven Nelson	Navajo Police Dept.	Tribal	steven_nelson@navajon-nsn.gov
Mary Newton	Camp Valley Marshal's Office	Yavapai	mary.newton@campverde.az.gov
Mike Nuttall	Springerville Police Department	Apache	mnuttall@springervilleaz.gov

Name	Agency	Location	Contact Info
Ron Parks	Chandler Police Department	Maricopa	Ron.Parks@chandleraz.gov
Heather Pyeatt-Morris	Yuma Public Safety Communications	Yuma	Heather.Pyeatt-Morris@yumaaz.gov
Fernando Reyes	AZDOHS	State	freyes@azdohs.gov
Steve Rutheford	Greenlee County Emergency Management	Greenlee	srutherford@co.greenlee.az.us
Mark Schroeder	Phoenix Water IT	Maricopa	mark.schroeder@phoenix.gov
Dale Shaw	TOPAZ Regional Wireless Cooperative (TRWC)	Maricopa	dshaw@topazrwc.org
Adam Shepherd	Gila County Sheriff's Office	Gila	ashepherd@gilacountyaz.gov
Jerry Simpson	Phoenix Fire	Maricopa	jerry.simpson@phoenix.gov
Susan Smith	Yuma Police Department	Yuma	susan.smith@yumaaz.gov
Scott Somers	Mesa Council (Jan)	Maricopa	councilmember.somers@mesaaz.gov
Kevin Sonoda	City of Scottsdale	Maricopa	ksonoda@scottsdaleaz.gov
Rich Stoddard	FBI	Federal	richard.stoddard@ic.fbi.gov
Craig Sullivan	County Supervisors Association	Elected Officials	craigs@countysupervisors.org
Ron Taylor	Salt River Project	Utilities	Ron.Taylor@srpnet.com
Shannon Tolle	City of Scottsdale	Maricopa	stolle@scottsdaleaz.gov
Eric True	Highlands Fire District	Coconino	etrue@highlandsfire.org
Jay Vargo	Pinal County IT	Pinal	Jay.Vargo@pinalcountyaaz.gov
David Verley	Bullhead City Fire	Mohave	dverley@bullheadfire.org
John Voorhees	Pima County Wireless Integrated Network	Pima	john.voorhees@pima.gov
Pete Weaver	Maricopa County Department of Emergency Management (MCDEM)	Maricopa	peteweaver@mail.maricopa.gov
Jerome Woodford	CBP - Yuma Sector	Federal	jerome.wofford@dhs.gov
Mike Worrell	Phoenix Fire	Maricopa	mike.g.worrell@phoenix.gov
Jon Young	BLM - State Chief Ranger	Federal	J5Young@blm.gov

Appendix D: AZPSBN Workgroup Meetings

Table 25: Arizona Public Safety Broadband Network Workgroup Meetings

Meeting	Date	Attendees
Interoperable Communications Technical Assistance Program (ICTAP) Broadband Technical Assistance Offering, NTIA Guidance, SLIGP Planning	11/27/2012	9
ICTAP Broadband Technical Assistance Offering, NTIA Guidance, SLIGP Planning	12/10/2012	9
ICTAP Broadband Technical Assistance Offering, SLIGP Planning	01/09/2013	9
Information and Outreach Plan, Mapping demonstration	01/23/2013	6
Pre-grant submission—Information and Outreach Plan Preview	02/06/2013	5
SLIGP Planning, Information and Outreach Plan Preview, Upcoming events	02/27/2013	7
SLIGP Planning, Information and Outreach Plan Preview, Upcoming events	09/04/2013	9
SLIGP Planning, Regional Wireless Systems Outreach, County Kickoffs Naming and Branding	09/18/2013	8
SLIGP Planning, Regional Wireless Systems Outreach, County Kickoffs	10/02/2013	9
FirstNet's Public Safety Advisory Council (PSAC) Activity, User Discussion, Grant Status	10/16/2013	6
Grant Status, CASM NextGen, Regional Wireless Systems meetings, County Kickoff meetings, National meetings, OEC Broadband Technical Assistance Coverage workshop	10/30/2013	11
Grant Status, Regional Wireless Systems meetings, County Kickoff meetings, National meetings, OEC Broadband Technical Assistance Coverage workshop	11/27/2013	8
OEC Broadband Technical Assistance Coverage Workshop, Education and Outreach content	12/11/2013	9
OEC Broadband Technical Assistance Coverage Workshop, Education and Outreach content, Request for Proposal (RFP) for Education & Outreach, Governance Discussion	01/08/2014	11
Education and Outreach content, RFP for Education & Outreach, Governance Discussion	02/19/2014	8
Status of Outreach Efforts, Governance Discussion	03/05/2014	7
Status of Outreach Efforts, Local meeting planning, Governance Discussion, Readiness Checklist and Discussion Options	03/19/2014	11
Status of Outreach Efforts, Local meeting planning, Governance Discussion	04/02/2014	13
Status of Outreach Efforts, Outreach to Associations and State agencies	04/16/2014	11
Status of Outreach Efforts, Local meeting planning	04/30/2014	7
Status of Outreach Efforts, Local meeting planning	05/14/2014	12
Developing content for the County kickoff, Readiness Checklist	06/11/2014	8
County kickoff meetings, Website Status, Associations and State agencies, Governance discussion	07/09/2014	7

Meeting	Date	Attendees
County kickoff meetings, Website Status, Associations and State agencies	07/23/2014	7
County kickoff meetings, Website Status, Associations and State agencies	08/20/2014	9
County kickoff updates, Governance, Local Meeting Planning	09/03/2014	5
County kickoff updates, Governance, Local Meeting Planning, FirstNet Board meeting	09/17/2014	4
Local meeting planning, Maryland consultation—lessons learned, FirstNet Request for Information (RFI) and Public Notice, Governance Discussion	10/01/2014	6
Website Status (azfirstnet.az.gov), FirstNet Consultation, FirstNet RFI and Public Notice, Governance Discussion	10/15/2014	8
FirstNet Consultation, FirstNet RFI and Public Notice, Governance Discussion	10/29/2014	5
FirstNet RFI and Public Notice, AZPSBN Workgroup Expansion, Super Bowl	11/12/2014	18
AZPSBN Workgroup Membership, FirstNet Consultation, FirstNet RFI and Public Notice	11/13/2014	26
State Consultations Lessons Learned, Deployables	12/11/2014	24
State Consultation, Washington State Consultation Best Practices	01/08/2015	27
Use Cases, Florida State Consultation Best Practices, FirstNet Site Hardening	01/22/2015	21
Use Cases, Colorado State Consultation Best Practices, Brief on New Mexico's BTOP Project, State Consultation	02/05/2015	25
Data Collection, Texas State Consultation Best Practices	02/19/2015	23
Arizona State Consultation Readiness Checklist	03/05/2015	23
FirstNet's Second Notice and Request for Comment, Arizona State Consultation Readiness Checklist,	03/19/2015	12

Appendix E: Arizona FirstNet Outreach Materials

The following materials are a representative sample of the handouts and presentations created to support the Arizona FirstNet Outreach and Education efforts. These materials are being submitted along with this Pre-Consultation Readiness Report.

- Arizona FirstNet Tri-fold Brochure: AZFirstNet-trifold_final.pdf
- About Arizona FirstNet: About_AZ_FirstNet_original.pdf
- Meeting Invitations: Arizona FirstNet Meeting Invitation- Pima County.docx; County Kickoff Meeting flyer.pdf; Spring AZ FirstNet Meetings Invitation.pdf
- Meeting Agendas: Agenda_Final.pdf; Agenda_R2_v1.pdf
- Outreach Presentations: County Kickoff Yavapai V2_britt.pptx; Round 2 Flagstaff.pptx
- Survey forms: Secondary Users, Agency Validation and Coverage Objectives: Agency_Data_Collection_Long_v2.docx; EO_Data_Collection_v3.docx
- Feedback Forms: Feedback Forms_NTIA.pdf
- Posters: Poster.pdf
- National and Regional Contacts: PSAC_BOD_NTIA_08132014.pdf; APCO Western States.final.pdf
- FirstNet Handouts:
 - Law Enforcement
 - Fire
 - Emergency Medical Services
 - Elected Officials
 - Land Mobile Radio

Appendix F: eNewsletter History

Table 26: eNewsletter History

Newsletter Subject	Date Sent
Arizona Public Safety Broadband Network Working Group Meeting Agenda	02/18/2015
Free Webinar: How FirstNet Can Help EMS Provide Better Patient Care	02/11/2015
AZPSBN Workgroup Meeting Notes 2/05/15	02/09/2015
AZPSBN Meeting 2/5/15	02/02/2015
AZPSBN Working Group Meeting Notes 01/22/15	01/30/2015
AZPSBN Meeting 01/22/14	01/21/2015
AZPSBN Workgroup Meeting Notes 12/11/14	12/29/2014
Arizona FirstNet Meetings Today and Tomorrow	12/17/2014
Arizona FirstNet Meetings Today and Tomorrow	12/17/2014
Arizona FirstNet Meetings—December 2014	12/12/2014
AZPSBN agenda for Dec 11 1pm	12/09/2014
Arizona FirstNet Northern Arizona December 2014 Meetings	12/08/2014
Comments Needed by October 10—FirstNet Public Notice & RFI	10/04/2014
Comments Needed—FirstNet Public Notice & RFI	10/04/2014
Arizona FirstNet Coconino County Kickoff Meeting Reminder	07/10/2014
Arizona FirstNet Yavapai County Kickoff Meeting Reminder	07/10/2014
Arizona FirstNet Santa Cruz County Kickoff Meeting Reminder	07/04/2014
Arizona FirstNet Pima County Kickoff Meeting Reminder	07/04/2014
Arizona FirstNet Pinal County Kickoff Meeting Reminder	06/30/2014
Arizona FirstNet Pinal County Kickoff Meeting	06/30/2014
Arizona FirstNet Pinal County Kickoff Meeting	06/30/2014
Arizona FirstNet Coconino County Kickoff Meeting	06/30/2014
Arizona FirstNet Cochise County Kickoff Meeting	06/24/2014
Arizona FirstNet Cochise County Kickoff Meeting	06/24/2014
Arizona FirstNet Cochise County Kickoff Meeting	06/24/2014
Arizona FirstNet Santa Cruz County Kickoff Meeting	06/21/2014
Arizona FirstNet Santa Cruz County Kickoff Meeting	06/21/2014
Arizona FirstNet Pima County Kickoff Meeting	06/19/2014
Arizona FirstNet Pima County Kickoff Meeting	06/19/2014

Appendix G: Tribal Nation Contact Information²⁶

Ak-Chin Indian Community 42507 W Peters & Nall Road Maricopa, AZ 85239 http://www.ak-chin.nsn.us/	Navajo Nation PO Drawer 9000 Window Rock, AZ 86515 http://www.navajo-nsn.gov/
Cocopah Indian Tribe Avenue G & County 15th Somerton, AZ 85350 http://www.cocopah.com/	Pascua Yaqui Tribe 7474 S Camino DeOeste Tucson, AZ 85746 http://www.pascuayaqui-nsn.gov/
Colorado River Indian Tribes 26600 Mohave Rd Parker, AZ 85344 http://crit-nsn.gov/	Pueblo of Zuni Tribe 1203B State Hwy 53 PO Box 339 Zuni, NM 87327 http://www.ashiwi.org
Fort McDowell Yavapai Nation PO Box 17779 Fountain Hills, AZ 85269 http://www.ftmcdowell.org/	Salt River Pima-Maricopa Indian Community 10005 E Osborn Rd Scottsdale, AZ 85256 http://www.srpmic-nsn.gov/
Fort Mojave Indian Tribe 500 Merriman Ave Needles, CA 92363 http://www.fortmojave.com/	San Carlos Apache Tribe PO Box 0 San Carlos, AZ 85550 http://www.sancarlosapache.com/
Fort Yuma-Quechan Tribe PO Box 1899 Yuma, AZ 85366	San Juan Southern Paiute Tribe PO Box 1989 Tuba City, AZ 86045
Gila River Indian Community PO Box 97 Sacaton, AZ 85147 http://www.gilariver.org	Tohono O'odham Nation: PO Box 837 Sells, AZ 85634 http://www.tonation-nsn.gov/
Havasupai Tribe PO Box 10 Supai, AZ 86435 http://www.havasupaitribe.com/	Tonto Apache Tribe #30 Tonto Apache Reservation Payson, AZ 85541
Hopi Tribe PO Box 123 Kykotsmovi, AZ 86309 http://www.hopi-nsn.gov/	White Mountain Apache Tribe PO Box 700 Whiteriver, AZ 85941 http://www.wmat.nsn.us/
Hualapai Tribe PO Box 179 Peach Springs, AZ 86434 http://www.hualapai-nsn.gov/	Yavapai-Apache Nation 2400 W Dubai Camp Verde, AZ 86322 http://www.yavapai-apache.org/
Kaibab-Paiute Tribe Tribal Affairs Building HC 65, Box 2 Fredonia, AZ 86022 http://www.kaibabpaiute-nsn.gov/	Yavapai-Prescott Indian Tribe 530 E Merritt Street Prescott, AZ 86301

²⁶ http://azcia.gov/tribes_of_arizona.asp

Appendix H: Wireless Services Contract

The State of Arizona has four statewide contracts in place for wireless services. These contracts are available for use by State agencies and local governments, though some agencies choose to negotiate directly with each provider. Each Master Blanket Purchase Order listed below is comprised of multiple documents that are included as a separate attachment to this checklist, and are also available online at <http://procure.az.gov>.

AT&T Mobility: Master Blanket Purchase Order [ADSP013-032444](#)

- 1907 ATT MSA Executed.pdf
- ATT ACORD.pdf
- COI exp 060115~1.pdf
- E-Rate 470 USAC submission.pdf
- PA ADSP013-032444.pdf
- Pricing Discounts.pdf

Sprint: Master Blanket Purchase Order [ADSP013-034209](#)

- Contract Administration~26.zip
- Contract File ADSP013-034209.zip
- Contract File~8.zip
- E-Rate 470 response.zip
- E-Rate 470 USAC submission~3.pdf
- Sprint ACORD.pdf

T-Mobile: Master Blanket Purchase Order [ADSP013-034339](#)

- E-Rate 470 USAC submission~2.pdf
- State of Arizona E-Rate Bid FINAL 082112_th_FullyExecuted.pdf
- T-Mobile Certificate of Liability Insurance - 2013-2014.pdf
- T-Mobile Certificate of Property Insurance - 2013-2014.pdf
- WSCA Contract Overview AZ 2012 2018.pptx

Verizon Wireless: Master Blanket Purchase Order [ADSP013-034099](#)

- Amendment No 1 Updated Contract Lanague.pdf
- Amendment No 2 Network Fleet Addition~1.pdf
- ATTACHMENT CC.docx
- AZ DOA WSCA-FINAL Response020113.pdf
- COI exp 063015.pdf
- E-Rate 470 USAC submission~1.pdf
- PA ADSP013-034099.pdf
- Part II_Binder Cost.pdf
- RFP 1907 Amendment 1.doc
- RFP 1907 Amendment 2.docx
- RFP 1907 WSCA Wireless.docx

- Verizon MSA.pdf
- Verizon Part I_Binder Technical.pdf
- VZW WSCA Equipment Matrix 11 1 12.pdf
- WSCA Equip Matrix 082514~1.pdf
- WSCA Q1 2015 Promo.pdf
- WSCA Q4 Promotional Equipment Offers 10 1 2012.pdf
- WSCA Update 22 _04_08_14.pdf

Appendix I: Applications Used by Arizona Public Safety

Table 27: Applications Used by Arizona Public Safety

Applications
911 Toolkit
Accela Asset Manager
Accurint
ACJIS
Acpen JWJ
Active 911
Active Wildfire
Aires
Apple maps
APS-E Citations
ASRC CEU GPS
Asset & Ticket Management System
Avensa.pdf
AZTracs
Backcounty Navigator Pro (Android)
Blackboard Connect
Body Cameras (Axon Flex)
Brazos
Computer Aided Dispatch (CAD)
Calendar
Cameo
Cargo Decoder
Cisco
Citizen alert
Citizen Serve
CMC Rescue
CMC Rescue Guide
Coplink
Crime View
Dropbox
DVR Specific Cameras
E Dispatch - fire only
eAccidents
ECM2
ECPR
eDispatches
eforce
EM Resources
Email

Applications
Emergency Reporting
EMResource (patient tracking)
EMS apps
EMS Patient Management
ePCR
EPRC 2
ERG 2012
ESRI (GIS)
ESRI Collector
Evidence.com
EZ Campos
Facebook
Facetime
FD Manager
Field EMS
Fieldbridge - Rescuebridge
Fieldsaver.com
Fire Departing
Firefighter response system (FFRS)
Firehouse
First Alert Weather
Golden Hour
Google Chrome
Google Earth
Google Maps
GPS tracking program
Haz-Mat
Health EMS
High Planes
HSIN
ICS Forms
IFR
Image Trend
Image Trend EMS
Incident Management
Inspections
Internet
IRESQ

Applications
Jail Management System (JMS)
k9 tracking
Language Translation
LEO
LERMS & Mobile (RMS)
Lightning Finder
Lotus Notes
Mapping
Microsoft Word
MS Lync 2013
MS Outlook
MS Excel 2013
MYRADARPRO (Weather radar)
NC4
National Fire Incident Reporting System (NFIRS)
Nixle
NOAA
Nursing apps
One Call Now
Patient Care
PDF Maps
Photo Sharing
Photos
PPP medical protocols
PT Tracking
Pulse Point
RAIDS online
Real Time Data Exchange
Remote access/VPN, SCADA monitoring
Report Writing

Applications
RISSNET
RMZN
SARTOPO (Search and Rescue Topo Maps)
SeeClickFix
SendWordNow
Skype
Spidertracks
Spillman Touch - CAD
Summit
Taser-Axon Flex app
Telestaff
Terrain Navigator Pro
Text
Thin Blue Line
Time keeping apps
Tip Soft
Topo Maps
Trac's
Traffic Accidents
Triage
Various Android and Apple Apps
Video Sharing
VPN
Weather
Web-based apps across departments
WebEOC
WENS - Mass Notification
WISER
Work orders (Hansen)
311 (future project)

Appendix J: Southwest Border Region Considerations for Nationwide Public Safety Broadband Network Planning and Development



Southwest Border Region Considerations for Nationwide Public Safety Broadband Network Planning and Development

Objective: Outline considerations addressed by the Southwest Border Communications Working Group (SWBCWG) to assess the current public safety communications environment in the Southwest Border Region, provide regional perspectives on the planning and development of the Nationwide Public Safety Broadband Network (NPSBN), and the continued support of regional land mobile radio (LMR) systems.

Background

In an effort to improve interoperable communications for emergency responders, the *Middle Class Tax Relief and Job Creation Act of 2012*, which includes provisions to fund and govern the NPSBN, was signed into law on February 22, 2012. Over the past year, the First Responder Network Authority (FirstNet) Board has begun its efforts to plan and deploy the NPSBN. The NPSBN is intended to provide a secure, reliable, and dedicated interoperable network for emergency responders to communicate during an emergency, and such a nationwide resource would be particularly valuable to emergency responders located in the Southwest Border Region.

Stakeholders in this region face a number of unique communications challenges that should be considered during the planning and development of the NPSBN. Some of these challenges and considerations (highlighted below) are unique to the Southwest Border Region, while others are endemic to the NPSBN itself, such as coverage calculations, tower construction, equipment installation, environmental controls, and technical requirements. It is also important to acknowledge the continuing requirements and capabilities of the numerous LMR systems that currently support public safety entities along the Southwest Border. LMR systems will be required for supporting public safety mission critical voice until an alternate capability for the NPSBN is developed.

Border Region-specific Perspectives on NPSBN Planning and Deployment

In planning for and supporting the development of the NPSBN and expansion or maintenance of LMR systems, there are a variety of technical, operational, and policy considerations that affect the public safety community in the Southwest Border Region. While some of these issues may not be unique to the region, they may be exacerbated by the operating environment found in the area. Several of these considerations are discussed below:

Limited Communications Coverage: Coverage reliability along the Southwest Border may be lower than in urban areas because of terrain diversity, population density and variance, and lack of infrastructure (e.g. antenna structures, availability of adequate and sufficient commercial interconnection services). For instance, New Mexico is the fifth largest state, with over 50% of its population located in the middle Rio Grande Corridor. Although legislation refers to ensuring

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substantial rural coverage, the phased deployment of the NPSBN may call for coverage to be complemented by means of deployable assets (during major incidents), roaming, or partnership with commercial carriers. The leveraging of existing infrastructure may prove difficult in border areas due to the lack of suitable sites or antenna structures. Thus, there is the need to develop partnerships between public safety entities, enhance or rehabilitate existing infrastructure, develop new infrastructure, or rely on third-party partners such as tower or service providers to support the network. Some of these options would entail high capital cost.¹

Limited Infrastructure: In many areas along the Southwest Border Region there is an absence of communications infrastructure, both commercial and public safety, due to the geography and consistent challenges of deploying and maintaining sufficient infrastructure. Additionally, development of commercial infrastructure may be expensive and problematic due to environmental and other Federal land use limitations. Each State will need to reach out to its local jurisdictions and determine what infrastructure is already available to FirstNet to assist in the construction of the network. Examples include existing fiber networks and backhaul for Long Term Evolution (LTE), LMR, and Next Generation 9-1-1. FirstNet needs to leverage partnership opportunities with utilities, tower companies, and local government entities to coordinate deployment and provide operational guidance. Some States are already collecting this information; however there does not appear to be a standardized format at this time.²

Equipment and Training Limitations: Governments at all levels are experiencing significant downturns in budget and grant-provided revenues. This impacts the ability of public safety agencies to initiate or continue capital projects to enhance, or in some cases replace, outdated, outmoded or non-standard public safety communications systems. Southwest Border Region installations often require more robust construction, and associated challenges, compared to an urban environment. As agencies curtail expenditures, discretionary training, which communications training and exercises usually are categorized, is eliminated or deferred in favor of other mandatory training activities. Build-out of the NPSBN will require additional training and exercises to ensure preparedness, that equipment is operational, and that applications and services are meeting the mission need. Budgetary restraints may hamper the ability to effectively train personnel to use NPSBN equipment, both on their own and in conjunction with other emergency responders.

Varying/incompatible communications systems, equipment, or operating procedures: Many LMR systems for public safety agencies are positioned across six bands of the radio spectrum, which contributes greatly to interoperability challenges. Limited understanding of existing and emerging radio system standards, varying budget cycles, and agency needs have over time allowed neighboring systems to develop and be operated in modes that may actually hinder interoperability. This is true of much of public safety across the country, but is exacerbated by other Southwest Border issues reviewed above. The lack of available capital funding for systems replacement has led to continued usage of older, outmoded equipment. This presents additional interoperability challenges, as well as operational difficulties in maintaining systems and equipment that are significantly past their operational life.

¹ NPSTC SORs for FirstNet Consideration – December 7, 2012

² Andrew Seybold, "Building the Nationwide Public Safety Broadband Network."

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Network Robustness and Reliability: Numerous groups and experts have stated that the NPSBN must be a robust system in order to meet public safety standards under emergency conditions. Technology and operational standards in the commercial wireless industry are, in some cases, inadequate for public safety. Outages during past natural disasters such as Hurricane Sandy continue to demonstrate these deficiencies. However, hardening the system (e.g., deploying cell towers and operational infrastructure that can withstand hurricane-force winds and flooding) will require substantial investment.³ These obstacles are made even more challenging by the unique operating environments found in the Southwest Border Region.

Ensuring interoperability while enabling secure communications: To achieve interoperability with Federal partners, State, local and tribal agencies must incorporate compatible encryption technology into existing systems, and develop operational procedures to support encryption capabilities and usage. Invoking secure communications capabilities through the use of encryption features adds additional costs and challenges to operability and interoperability, as infrastructure and subscribers must be able to support the encryption technology selected for deployment.

Enabling Mission Critical Voice Communications: Within NPSBN forums, it is being stressed that the NPSBN will not be able to support public safety grade mission critical voice communications capabilities required by the public safety community in the near future. In addition, commercial LTE may not have the capacity to be adequately accessible during a major event or emergency. Public safety practitioners will continue to rely on LMR and legacy communications systems for mission critical voice communications as the NPSBN evolves. Investments in LMR infrastructure, subscriber devices, and overall system maintenance and resiliency continue to be a priority; however, it is also important that State and local agencies prepare for the development of the NPSBN, and ensure their jurisdictions are poised to incorporate this new tool into their public safety operations and governance structures.⁴

Technical Requirements: There are numerous technical requirements to facilitate the migration of public safety users' current systems to the NPSBN. Requirements focus on evolution and upgrade of the network, current applications and data services, tower placement/coverage areas, capacity expansion, early builder migration, construction of backhaul and radio access network, and cybersecurity. An additional consideration is the access and use of sensitive information by public safety on a daily basis, which requires robust security measures to ensure integrity, confidentiality, privacy protection, and information assurance. The NPSBN would present a high profile target for cyber-attacks, and would thus require extensive security measures to ensure physical site security and such attacks as denial of service.⁵

Next Steps

The above considerations are intended to provide information concerning the operational environment along the Southwest Border, which may be used during the planning, development, and maintenance of the NPSBN and LMR systems in the Southwest Border Region. Limited

³ <http://www.fiercebroadbandwireless.com/story/deloitte-firstnet-and-public-private-model/2013-01-31>

⁴ http://www.dhs.gov/sites/default/files/publications/Case%20Study_Broadband%20FirstSteps.pdf

⁵ Ibid

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infrastructure and network coverage along the border, among other factors, make it difficult to deploy the NPSBN in a uniform manner across the Region. The SWBCWG seeks to mitigate these challenges by providing a forum in which Federal, State, local, and tribal organizations share information on common emergency communications issues, and facilitate Federal involvement in such projects as the NPSBN. In doing so, the SWBCWG works to enhance public safety communications operability and interoperability, and effectively use the Region's scarce critical communications infrastructure resources. Stakeholder groups should continue to review and coordinate the sharing of this information to assist in the planning of the NPSBN.